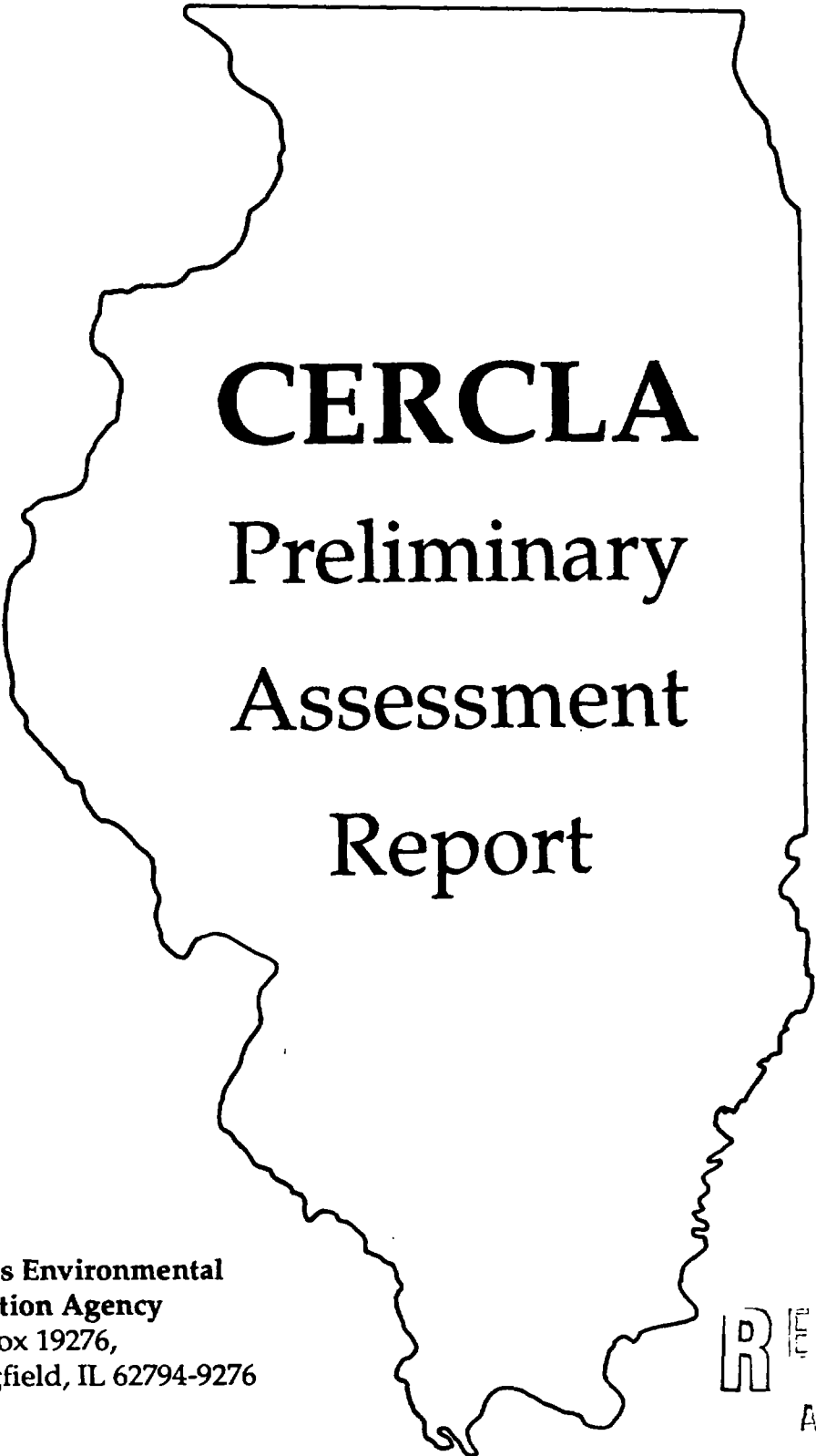


**SEMS-RM DOCID
925121**



CERCLA

Preliminary Assessment Report



**Illinois Environmental
Protection Agency**
P.O. Box 19276,
Springfield, IL 62794-9276

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Pre-Remedial
Unit

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EPA Region 5 Records Ctr.



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CKX

Executive Summary

Kettle River Treating Company was placed on the Comprehensive Environmental Resource Compensation and Liability Inventory System (CERCLIS) list on August 29, 1990 as a site discovery. This site, among others, was discovered while researching past industrial waste disposal activities in the East St. Louis region (Madison & St. Clair Counties) from 1890 to the present time by Mr. Craig Colten of the Illinois State Museum, Springfield, Illinois. The Illinois Environmental Protection Agency (IEPA) performed the Preliminary Assessment (P.A.) under the authority of CERCLA as amended by SARA.

The Preliminary Assessment was conducted to collect information sufficient to support a decision regarding the need for further action under CERCLA/SARA. The assessment will investigate & discuss the type of site, operational history, the four environmental pathways (groundwater, surface water, soil exposure and air releases) and the environmental hazards associated with the site.

Kettle River Treating Company ILD984791665 was located 1.8 miles north of I-270 on Center Grove Road approximately 1/8 mile west of State Route 159 in Edwardsville Township, Madison County (Figure 2). The site occupied approximately 80 acres on the south side of Center Grove Road, one of the boundary lines between the cities of Edwardsville and Glen

Carbon. Bordering the site to the north was Center Grove Road, south by open farm field, east by the Illinois Terminal Railroad and State Route 159 and west by a side track of the Norfolk & Western Railroad. Kettle River Treating Company was situated in the N 2/3, NW 1/4, SE 1/4; the N 2/3, NE 1/4, SW 1/4 and portions of the E 1/2, NW 1/4, SW 1/4 of Section 23 T.4N.-R.8W. (Figures 1 & 2).

During a site reconnaissance on October 29, 1990 (See Figure 5 for photo locations) the site was observed to be entirely unrestricted as there are no fences at any point around the former facility. The only visible remnants of the former site are three piles of broken up, reinforced concrete and a 30'X 30' concrete floor of a former building. Residences now exist on the northcentral and northwest portion of the former site. Small businesses are now established or are in the construction phase at the west end of the site. Numerous railroad siding tracks and treated railroad tie storage areas were formerly located where the residences and businesses are presently situated. The eastern, central and southern portions of the site are currently unoccupied. These areas are owned by Lakewood Development Incorporated. The various plats are now known as Kettle River II & III. There is no known date for future development of this area. The site appears to have been graded after removal of all railroad tracks, ties and structures. The site is currently flat with vegetative growth (grass & weeds) being mowed and a few

established trees scattered about. Review of a number of aerial photographs dating from 1959 to 1976 has revealed the location of former site features (Figures 3,4 & 5). In the northeast portion of the site there were (what appears to have been) two surface impoundments, six upright-cylindrical storage tanks, and four buildings. The remainder of the site contained numerous railroad side tracks and large stacks of both treated and untreated railroad ties. These stacks paralleled the side tracks for ease of loading and unloading.

Kettle River Treating Company had operations which consumed coke by-products which possibly left hazardous materials on site. The company was established in the 1890's in Madison, Illinois with that particular operation being heralded as one of the worlds largest, operating with approximately 225 employees in 1920. The Edwardsville site was established in January 1925 with construction beginning later that month. The plant employed between 50-75 persons by 1930.

Construction consisted of establishment of a switch connection between the Nickle Plate System R.R. tracks (now known as the Norfolk & Western) west of the plant, a switch connection with the St. Louis Troy & Litchfield & Madison R.R. tracks (now known as the Illinois Terminal) east of the plant, laying of railroad track on site (approximately six to seven miles of track) with each set of on-site tracks running parallel to one another and being 72 feet apart; constructing the main plant building, a 100 ft. x 200 ft. structure which

housed the companys' equipment; constructing the 124 ft. long, 8 ft. diameter, 300,000 pound treatment cylinder; six creosote solution storage tanks; constructing a 150,000 gallon water tower and extending a water line south from the Tuberculosis Sanitarium which is about 1/2 mile north of the site.

The plant was estimated to be able to store 1.25 million railroad ties and various amounts of other types of timber products. The timber was to be stacked along the railroad tracks on site for air drying. Drying time was given as one year, after which the ties etc. were placed in the treatment cylinder for six hours at a pressure of 250 pounds per square inch. After treatment the ties were removed from the cylinder, placed on special railroad cars, taken to a drip dry area and allowed to dry. Approximately 200,000 ties were treated per year. With no information available regarding containment of the creosote drippings from the drip dry areas and the treatment cylinder operations and considering the time period and lack of environmental concern and/or lack of awareness of the hazardous nature of the creosote treatment chemicals, it is with a degree of certainty that the author assumes the creosote solution was allowed to accumulate on the ground in these areas with little or no clean-up attempted. Also, it is uncertain if the facility had a pit below the treatment cylinder to collect any spilled treatment solution when it was opened after treatment cycles.

The site is located on a localized, relatively flat area on a slightly rolling ground moraine of Illinoian Age.

Physiographically the site is situated on the Springfield Plain of the Till Plains Section of the Central Lowland Province. The site can also be characterized as lying at approximately 575 feet above mean sea level (MSL) at the drainage divide between two highly dendritic drainage basins. The north basin drains to Cahokia Creek and into the Mississippi River. The south basin drains to the Cahokia Canal and into the Mississippi River.

The unconsolidated Pleistocene glacial drift in this region consists of a complex of ice laid till, water laid silt, sand and gravel alluvium and wind blown loess. The majority of this material is pre-Illinoian and Illinoian in age. Some sand and gravel alluvium and the overlying loess are Wisconsinan in age. Drift ranges from 74 feet thick over shallow bedrock below the site to approximately 95 feet thick over the Cahokia Bedrock Valley, three miles northwest of the Kettle River Treating Company site. The blanketing loess varies in thickness from 6 to 10 feet in depth. Sand and gravel deposits within the drift on the uplands are scarce and occur as stringers, most of which are only a few inches thick and of extremely limited areal extent. Sand and gravel deposits in the Cahokia Creek bottomlands and beyond into the American Bottoms occur mainly as outwash deposits in buried

channels and as alluvial deposits of the ancient Mississippi River. Water yielding sand and gravel deposits in the American Bottoms occur generally at a depth of about 50 feet. Edwardsville's public water supply wells are constructed in this formation at depths of approximately 90 feet. These wells are located 1 1/2 miles west of the bluff line, west of Edwardsville in Poag, Illinois.

Beneath the glacial drift the shallow bedrock in the area consists mainly of shales, sandstones and limestones of the Pennsylvanian Modesto Formation. These are encountered at 74 feet below ground surface ranging in thickness from 100 feet to 400 feet. If fractured, the limestone at the bedrock surface may be capable of yielding small supplies of water for domestic users, but cannot be considered for moderate to large supplies such as municipal systems. The next potential aquifer is the Mississippian System consisting of the Chester Limestone (limestone-shale/sandstone-shale) formations, St. Genevieve Limestone, St. Louis Limestone, Salem Limestone, Warsaw Shale etc. The Chester Limestone is encountered 200-300 feet below ground surface and is between 1 inch to 200 feet thick. Beneath the Chester is the St. Genevieve which is about 200-500 feet below ground surface and 1 inch to 150 feet thick. Underlying the St. Genevieve is the St. Louis and Salem limestones which are encountered between 250 to 650 feet below ground surface and are 250 and 350 feet thick. Beneath the Salem Limestone is the Warsaw Shale which is

found approximately 500 to 650 feet below ground surface and generally is estimated to be 100 feet thick below the site. The Warsaw is potentially a confining layer between the formations mentioned, which are above it and those found below. The predominant topographic feature of the bedrock surface in the Edwardsville area is the buried Cahokia Bedrock Valley which trends from the northeast to southwest with the top of the south valley wall being approximately 1 to 2 miles north of the Kettle River Treating Company site. Bedrock elevations range from approximately 500 feet above MSL under the site and at the valley flank to approximately 350 feet above MSL at the lowest point in the southwestern portion of the valley.

The surface geology of the immediate area, as mentioned previously, consists mainly of glacial drift. The drift is characterized by interbedded layers and lenses of clay and sand with some silt and gravel present. Top soil varies from 1 to 3 feet deep over the site. Underlying the top soil is approximately 8 to 10 feet of yellow clay, 18 to 30 feet of interbedded yellow clay, blue clay, sand and gravel and 15 to 20 feet of grey clay with dirty yellow sand and gravel. Groundwater in the site area is found between 15 and 50 feet below ground surface. The direction of groundwater flow is not known at this time. It is known, however, that slope of the underlying bedrock is toward the northwest. Surface topography, as mentioned, is generally flat on site with

slope at the perimeter of the site being toward the south, southwest and west.

Drinking water for communities in the area is supplied by a number of public groundwater wells located to the west of the uplands in the American Bottoms of the Mississippi River Valley. All of these wells are greater than four miles west and southwest of the Kettle River site. Private wells located within the four mile radius of the site obtain drinking water from the thin beds of sand and gravel within the areas glacial till. Many of the wells are large diameter wells penetrating the loess, obtaining water from the interface between the loess and underlying till. Private wells have been found to range in depth from 30 feet to 66 feet with water found at 20 feet to 60 feet in depth. The private well closest to the site is approximately 2500 feet to the south. It is estimated that there are 700 persons obtaining drinking water from private groundwater wells within the 4 mile radius around the former site. There have been no reports of groundwater contamination in the area.

Surface water runoff from the Kettle River Treating Company site tends to flow to the west and southwest. Drainage patterns viewed on both topographic maps and aerial photographs verify this. Drainage to the south flows via small unnamed field ditches to a small lake approximately 2000 feet south of the site. The lake appears to drain into

another small lake which is located 200 feet southwest of the first lake. The second lake drains via intermittent stream to an unnamed perennial stream which flows south along the Chicago and Northwestern and the Norfolk and Western railroad tracks. The perennial stream flows into Judys Branch and then to the Cahokia Canal and into the Mississippi River. Drainage from the western portion of the site flows via a field ditch west-southwest to an intermittent stream, immediately adjacent to and paralleling the railroad tracks mentioned, which joins the intermittent stream draining the south portion of the site. The joining of these two intermittent streams form the perennial stream mentioned above. The perennial stream is formed approximately 5000 feet downstream of the site. This point is identified as the probable point of entry (PPE) to surface water for the drainage pattern from the western portion of the site. The PPE to surface water for the drainage pattern from the southern portion of the site is located at the point where the field ditch enters the small lake 2000 feet (.38 miles) south of the site. The distance from the PPE at the lake to the PPE located at the beginning of the perennial stream is estimated to be 3700 feet (0.7 miles). The perennial stream flows 1.8 miles south from the stream PPE to where it joins Judys Branch. Judys Branch flows west-southwest for 2.7 miles where it joins the Cahokia Canal. The Cahokia Canal then flows south and west for the remaining 10.5 miles of the 15-mile in-water segment. There are no surface water intakes along the 15-mile in-water

segment of these surface water bodies. Fisheries have been identified to be from both PPEs to the end of the 15-mile in-water segment. Wetlands exist: as lakes downstream of the PPE at the lake south of the site, described as palustrian, unconsolidated bottom, intermittently exposed, diked impoundments; along the unnamed perennial stream (downstream of the stream PPE), Judys Branch and the Cahokia Canal as riverine, lower perennial, unconsolidated bottom, permanently flooded environments and along and outside of one or both banks of the Cahokia Canal as palustrian, emergent, semipermanently flooded environments.

There have been no reports of soil contamination on or near the site. As mentioned previously, there has been construction activity on the northcentral and western portions of the site. During these activities various degrees of excavating had been done with no reports of any visual anomalies or foul or noxious odors. Since operations ceased in 1960 and the site razed shortly after that, there have been no workers on site. In 1960, at the time of closing, there were between 4-17 employees present. These workers and those razing the site could have potentially contacted contaminated waste, soil and/or breathed contaminated air. The same could be said about those individuals who had or are now constructing the structures occupying the northcentral and western portions of the site. Contact potential may continue depending on future site development. Depth, below

current grade, to the creosote drippings in the former drip dry areas and around the treatment cylinder is unknown.

Within a 4-mile radius of the site the population is calculated to be approximately 21,770 persons. The nearest individual and regularly occupied building is the warehouse located at the northeast corner of the former site. There are no schools or daycare facilities on-site or within 200 feet of the site. However, there are 4 residences and approximately 12 small businesses located on-site.

The information gathered for this text indicates a potential for releases of hazardous constituents on-site and possibly off-site due to excavations associated with construction on the old site property. If these constituents are present they would represent a risk of harm to human life and health and threat to the environment. Because there have been no reports or complaints of encounters with unusual substances in the soil, downstream in the lakes, etc. a recommendation of issuance of a low priority is given for further site investigation. However, to determine if there are hazardous substances remaining in the various media associated with Kettle River Creosote, the site should advance to the Screening Site Inspection stage of CERCLA's site assessment process with environmental samples being taken from and around the site.



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
ILD 984791405

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site) KETTLER RIVER CREOSOTE		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER CENTER GROVE ROAD - 1/8 MI. W. OF SR 159			
03 CITY GLEN CARBON	04 STATE IL	05 ZIP CODE 62025	06 COUNTY MADISON	07 COUNTY CODE 119	08 CONG DIST 21
09 COORDINATES LATITUDE 38 16 54.0 LONGITUDE 089 57 20.0		EDWARDSVILLE 7.5 MIN. QUAD (220 C)			
10 DIRECTIONS TO SITE (Starting from nearest public road) I-270 TO STATE ROUTE 159, NORTH 1.8 MILES TO CENTER GROVE ROAD WEST AT STOP LIGHT, APPROXIMATELY 1/8 MILE TO VACANT LAND ON SOUTH SIDE OF ROAD CENTER GROVE ROAD.					

III. RESPONSIBLE PARTIES

01 OWNER (if known) LAKEWOOD DEVELOPMENT INC.		02 STREET (Business, mailing, residential)			
03 CITY EDWARDSVILLE	04 STATE IL	05 ZIP CODE 62025	06 TELEPHONE NUMBER ()		
07 OPERATOR (if known and different from owner)		08 STREET (Business, mailing, residential)			
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER ()		
13 TYPE OF OWNERSHIP (Check one) <input checked="" type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL: _____ (Agency name) <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER: _____ (Specify) <input type="checkbox"/> G. UNKNOWN					
14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply) <input type="checkbox"/> A. RCRA 3001 DATE RECEIVED: _____ MONTH DAY YEAR <input type="checkbox"/> B. UNCONTROLLED WASTE SITE (RCRA 103 a) DATE RECEIVED: _____ MONTH DAY YEAR <input checked="" type="checkbox"/> C. NONE					

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION <input checked="" type="checkbox"/> YES DATE 10/29/90 MONTH DAY YEAR <input type="checkbox"/> NO		BY (Check all that apply) <input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input checked="" type="checkbox"/> C. STATE <input type="checkbox"/> D. OTHER CONTRACTOR <input type="checkbox"/> E. LOCAL HEALTH OFFICIAL <input type="checkbox"/> F. OTHER: _____ (Specify) CONTRACTOR NAME(S): _____			
02 SITE STATUS (Check one) <input type="checkbox"/> A. ACTIVE <input checked="" type="checkbox"/> B. INACTIVE <input type="checkbox"/> C. UNKNOWN		03 YEARS OF OPERATION BEGINNING YEAR 1925 1960 ENDING YEAR <input type="checkbox"/> UNKNOWN			
04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED SLUDGE (TOXIC/PERSISTENT) OILY WASTE (TOXIC/PERSISTENT)					
05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION GROUNDWATER (POPULATION/ENVIRONMENT) SURFACE WATER (POPULATION/ENVIRONMENT)					

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Treatments) <input type="checkbox"/> A. HIGH (Inspection required promptly) <input type="checkbox"/> B. MEDIUM (Inspection required) <input checked="" type="checkbox"/> C. LOW (Inspect on time available basis) <input type="checkbox"/> D. NONE (No further action needed, complete current disposition form)			
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	--	--

VI. INFORMATION AVAILABLE FROM

01 CONTACT KENNETH W. CORKILL	02 OF (Agency/Organization) IEPA - RPM'S - LPC	03 TELEPHONE NUMBER 217 782-6760		
04 PERSON RESPONSIBLE FOR ASSESSMENT KENNETH W. CORKILL	05 AGENCY IEPA	06 ORGANIZATION RPM'S - LPC	07 TELEPHONE NUMBER 217 782-6760	08 DATE 6/25/91 MONTH DAY YEAR





POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
14D 984791665

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ KA GROUNDWATER CONTAMINATION 02 ☐ OBSERVED (DATE _____) ☒ K POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED 21,768 04 NARRATIVE DESCRIPTION
GROUND WATER IN THE AREA RANGES IN DEPTH FROM 15 TO 50 FEET BELOW GROUND SURFACE. SURFACE GEOLOGY CONSISTS OF GLACIAL DRIFT, CHARACTERIZED WITH CLAY & SAND WITH SOME SILT & GRAVEL PRESENT. GROUNDWATER COULD POTENTIALLY BE CONTAMINATED WITH CREOSOTE & CREOSOTE CONSTITUENTS. NO CONTAMINATION HAS BEEN NOTED IN GROUNDWATER NEAR THE SITE.

01 ☒ KB SURFACE WATER CONTAMINATION 02 ☐ OBSERVED (DATE _____) ☒ K POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED 70 04 NARRATIVE DESCRIPTION
SURFACE WATER FROM THE SITE DRAINS SOUTH & WEST VIA FARM FIELD OR OPEN FIELD DRAINAGE ROUTES. DRAINAGE SOUTH ENTERS A LAKE ABOUT 2000 FT. SOUTH OF THE SITE. DRAINAGE WEST FLOWS SOUTHWEST VIA FIELD DRAINAGE ROUTES TO A RAILROAD DRAINAGE DITCH WHICH FLOWS TO A PERENNIAL STREAM. NO CONTAMINATION HAS BEEN REPORTED DOWNSTREAM OF THE SITE.

01 ☒ KC CONTAMINATION OF AIR 02 ☐ OBSERVED (DATE _____) ☒ K POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED 21,768 04 NARRATIVE DESCRIPTION
POTENTIAL EXISTS FOR CONTAMINATION OF AIR, IF DURING EXCAVATION FOR CONSTRUCTION ON SITE OF OLD PLANT CREOSOTE OR CREOSOTE CONSTITUENTS ARE ENCOUNTERED & VAPORS ARE RELEASED. TO DATE NO REPORTS OF THIS HAS OCCURED DURING PAST CONSTRUCTION ACTIVITIES.

01 ☐ KD FIRE/EXPLOSIVE CONDITIONS 02 ☐ OBSERVED (DATE _____) ☐ L POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

N/A

01 ☒ KE DIRECT CONTACT 02 ☐ OBSERVED (DATE _____) ☒ K POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED 3813 04 NARRATIVE DESCRIPTION
DEPTH OF POTENTIAL CONTAMINANT IS UNKNOWN

01 ☒ KF CONTAMINATION OF SOIL 02 ☐ OBSERVED (DATE _____) ☒ K POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED ~80 04 NARRATIVE DESCRIPTION
(ACRES)
PAST SITE ACTIVITY CREATED A LARGE AREA OF CONTAMINATION. REFERENCE EXECUTIVE SUMMARY FOR SITE HISTORY & ACTIVITY.

01 ☒ KG DRINKING WATER CONTAMINATION 02 ☐ OBSERVED (DATE _____) ☒ K POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED 700 04 NARRATIVE DESCRIPTION
FROM WELLS
VARIOUS INDIVIDUALS ARE USING GROUNDWATER WITHIN THE 4-MILE RADIUS OF THE SITE. MOST PERSONS OBTAIN WATER FROM PUBLIC SYSTEMS WHICH OBTAIN WATER FROM GROUNDWATER WELLS LOCATED OUTSIDE OF THE 4-MILE RADIUS.

01 ☒ KH WORKER EXPOSURE/INJURY 02 ☐ OBSERVED (DATE _____) ☒ K POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 10-75 04 NARRATIVE DESCRIPTION
SITE IS NON-EXISTANT, HOWEVER, WHEN ACTIVE THERE WERE UP TO 75 PERSON WORKING ON-SITE IN 1930 & UP TO 17 WORKING ON-SITE IN 1960 WHEN IT WAS DECIDED TO CLOSE THE PLANT & MOVE EMPLOYEES & OPERATIONS TO THE MADISON, IL. PLANT.

01 ☒ KI POPULATION EXPOSURE/INJURY 02 ☐ OBSERVED (DATE _____) ☒ K POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

REFERENCE "A" - "P"



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

11D 984791665

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

DURING A 10-29-90 RECONNAISSANCE VISIT THE SITE WAS NOTED TO BE FULLY VEGETATED - GRASS, TREES ETC. NO BARE AREAS WERE NOTED.

01 ☒ K. DAMAGE TO FAUNA
04 NARRATIVE DESCRIPTION (Include names of species)

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

AS ABOVE - NO DAMAGE TO FAUNA NOTED

01 ☐ L. CONTAMINATION OF FOOD CHAIN
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

NONE KNOWN

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES
(Soils report standing liquids leaking drums)

02 ☐ OBSERVED (DATE: _____)

☒ POTENTIAL

☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED 21,768

04 NARRATIVE DESCRIPTION

WASTE CREOSOTE & CREOSOTE RELATED CONSTITUENTS MAY BE PRESENT AT A POINT BELOW GRADE, HOWEVER THIS IS UNKNOWN AT THIS TIME.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

NONE KNOWN

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

NONE KNOWN

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☒ POTENTIAL

☐ ALLEGED

REFERENCE "M"

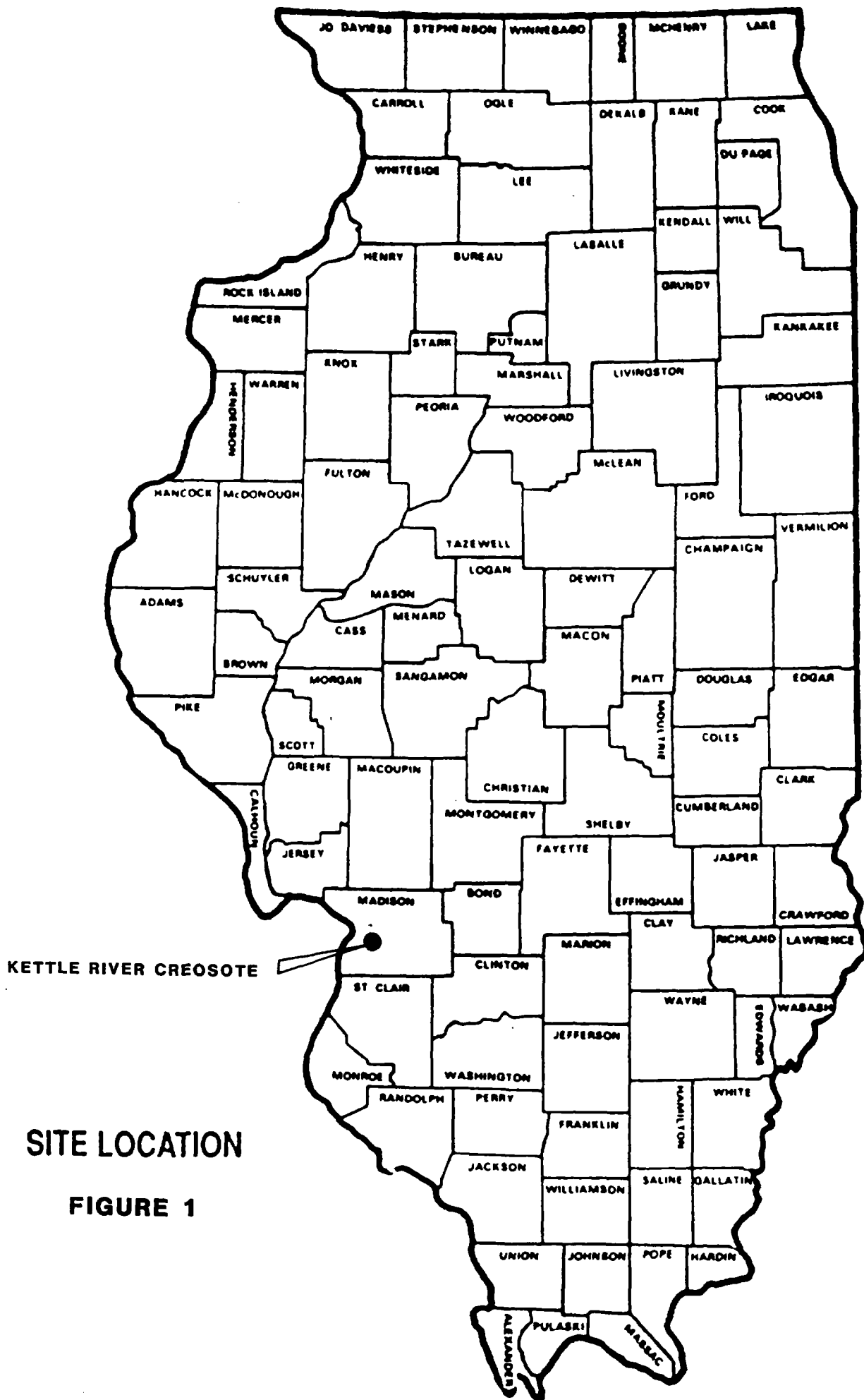
05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

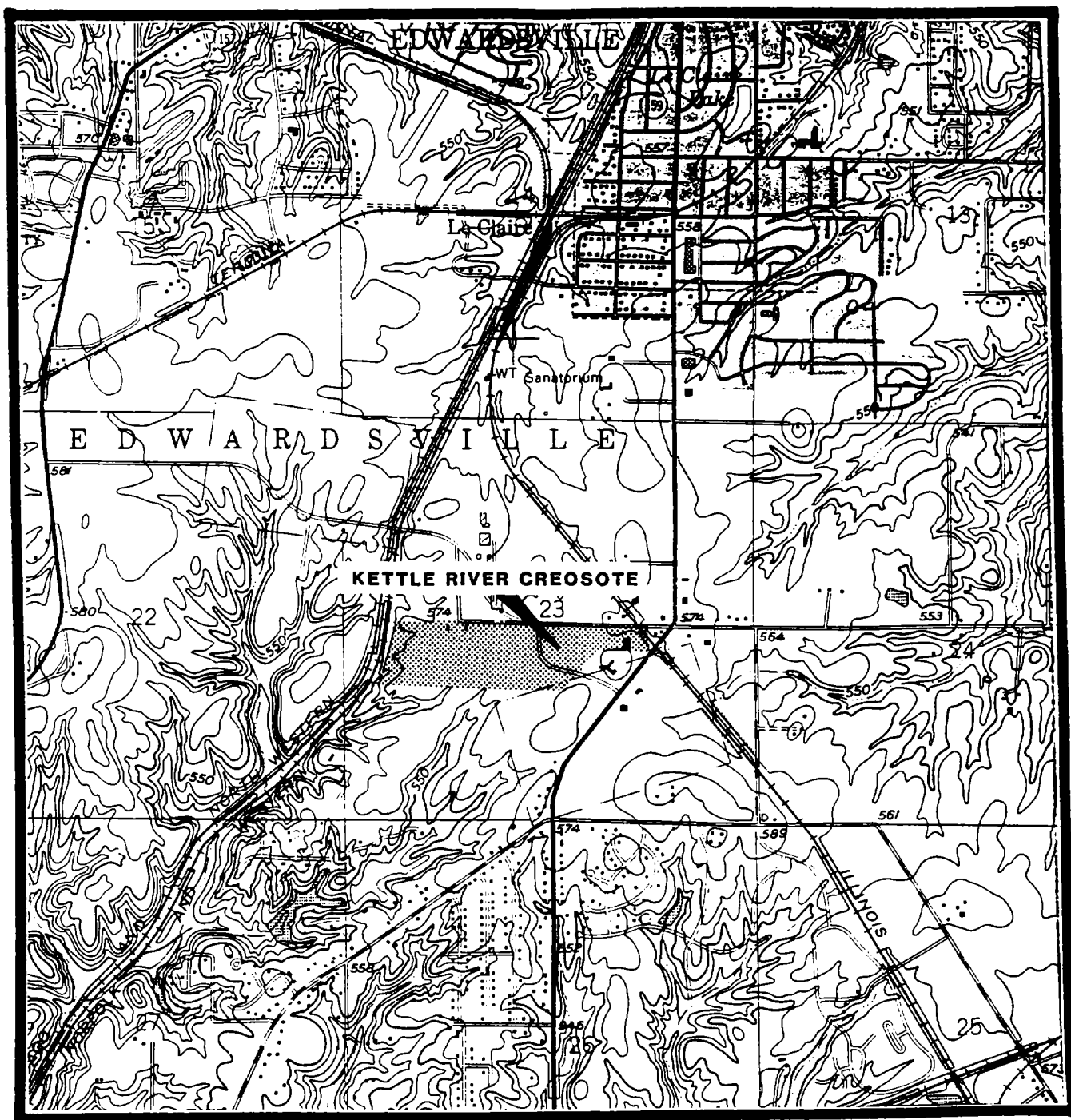
III. TOTAL POPULATION POTENTIALLY AFFECTED: 21,768

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

REFERENCE PART 2-VI





SITE MAP

FIGURE 2

SDMS US EPA Region V

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DATE: 10-29-90

TIME: 2:30 p

PHOTOGRAPH TAKEN BY:

KEN CORKILL

PHOTO NUMBER: 1

LOCATION: MADISON CO.

ILD 984791665/L1190000000

KETTLE RIVER CREOSOTE

COMMENTS: PICTURE TAKEN TOWARD

North - Northeast FROM

NORTHEAST PORTION OF FORMER

SITE. THIS BUILDING IS ACROSS

CENTER GROVE ROAD.



DATE: 10-29-90

TIME: 2:30 p

PHOTOGRAPH TAKEN BY:

KEN CORKILL

PHOTO NUMBER: 2

LOCATION: MADISON CO.

ILD 984791665/L1190000000

KETTLE RIVER CREOSOTE

COMMENTS: PICTURE TAKEN TOWARD

NORTHEAST FROM SAME

LOCATION AS ABOVE. BUILDING

AT RIGHT IS AT EASTERN

EDGE OF FORMER SITE.



DATE: 10-29-90

TIME: 2:30 p

PHOTOGRAPH TAKEN BY:

KEN CORKILL

PHOTO NUMBER: 3

LOCATION: MADISON CO.

ILD 984791665/L1190000000

KETTLE RIVER CREOSOTE

COMMENTS: PICTURE TAKEN TOWARD

SOUTHEAST FROM SAME

LOCATION AS PREVIOUS. AUTO

DEALER IS NOT BUILT ON SITE

PROPERTY.



DATE: 10-29-90

TIME: 2:30 p

PHOTOGRAPH TAKEN BY:

KEN CORKILL

PHOTO NUMBER: 4

LOCATION: MADISON CO.

ILD 984791665/L1190000000

KETTLE RIVER CREOSOTE

COMMENTS: PICTURE TAKEN TOWARD

SOUTH FROM SAME LOCATION

AS PREVIOUS. SITE PROPERTY

EXTENDED TO NEAR THE

SIGN AT FAR RIGHT.



DATE: 10-29-90

TIME: 2:30 p

PHOTOGRAPH TAKEN BY:

KEN CORKILL

PHOTO NUMBER: 5

LOCATION: MADISON CO.

ILD 984791665/L1190000000

KETTLE RIVER CREOSOTE

COMMENTS: PICTURE TAKEN TOWARD

SOUTHWEST FROM SAME

LOCATION AS PREVIOUS.



DATE: 10-29-90

TIME: 2:30 p

PHOTOGRAPH TAKEN BY:

KEN CORKILL

PHOTO NUMBER: 6

LOCATION: MADISON CO.

ILD 984791665/L1190000000

KETTLE RIVER CREOSOTE

COMMENTS: PICTURE TAKEN TOWARD

WEST FROM SAME LOCATION

AS PREVIOUS. FORMER SITE

EXTENDED BEYOND THE SHOWN

STRUCTURES BY ABOUT 1/4 MILE.



DATE: 10-29-90

TIME: 2:30 p

PHOTOGRAPH TAKEN BY:

KEN CORKILL

PHOTO NUMBER: 7

LOCATION: MADISON CO.

ILD 984791665/L 1190000000

KETTLE RIVER CREOSOTE

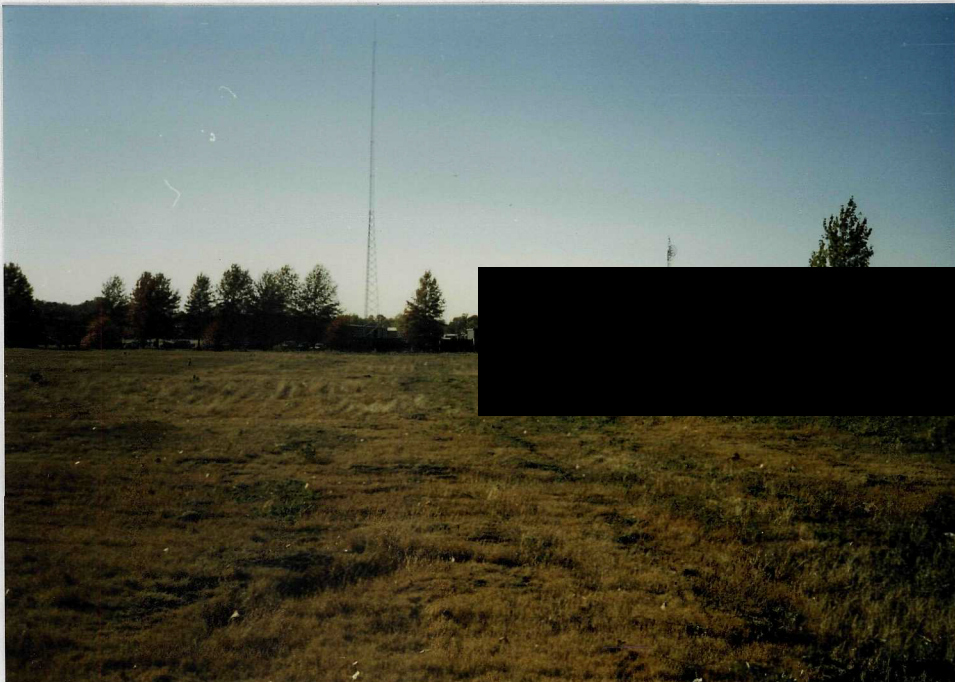
COMMENTS: PICTURE TAKEN TOWARD

WEST FROM SAME LOCATION

AS PREVIOUS. RESIDENCES

& BUSINESSES ON FORMER

SITE.



DATE: 10-29-90

TIME: 2:30 p

PHOTOGRAPH TAKEN BY:

KEN CORKILL

PHOTO NUMBER: 8

LOCATION: MADISON CO.

ILD 984791665/L 1190000000

KETTLE RIVER CREOSOTE

COMMENTS: PICTURE TAKEN TOWARD

NORTHWEST FROM SAME

LOCATION AS PREVIOUS. NORTHERN

PROPERTY LINE OF FORMER SITE

WAS CENTER GROVE ROAD. (TRUCK ON ROAD)



DATE: 10-29-90

TIME: 2:30p

PHOTOGRAPH TAKEN BY:

KEN CORKILL

PHOTO NUMBER: 9

LOCATION: MADISON CO.

ILD 984791665/L1190000000

KETTLE RIVER CREOSOTE

COMMENTS: PICTURE TAKEN TOWARD

NORTH-NORTHWEST FROM SAME

LOCATION AS PREVIOUS.



DATE: 10-29-90

TIME: _____

PHOTOGRAPH TAKEN BY:

KEN CORKILL

PHOTO NUMBER: _____

LOCATION: MADISON CO.

ILD 984791665/L1190000000

KETTLE RIVER CREOSOTE

COMMENTS: PICTURE TAKEN TOWARD

NO PHOTO

Supporting Documentation

Supporting Documents

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02	Excerpts from: Investigation 191, Groundwater Geology of the E. St. Louis Area, Illinois, by Bergstrom & Walker; Urbana, Illinois 1956
03	Excerpts from: Environmental Geology Notes 91, Geophysical Assessment of Aquifers Supplying Eight Small Communities in Illinois, by Poole & Heigold; 1981, pgs. 9-15 & 55-60.
04	Hamel Well Site Survey Report by the Division of Public Water Supplies, published by IEPA; 1990.
05	Troy Well Site Survey Report by the Division of Public Water Supplies, published by IEPA; 1989.
06	City of Edwardsville Tax Assessor Records for T.4N.-R.8W. Sec. 23.
07	Excerpts from: Circular 225, Groundwater Geology in South-Central Illinois, by Selkregg Pryor, & Kempton; published by ISGS, 1957, pgs. 25 & 26.
08	January 9, 1925 newspaper article about construction of

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09

May 16, 1925 newspaper
article about construction of
Kettle River Creosote.

10

Various groundwater well
logs from the immediate area
around Kettle River Creosote

**HAZARDOUS WASTE RESEARCH AND INFORMATION CENTER
Illinois State Water Survey Division**

1808 Woodfield Drive
Savoy, Illinois 61874



HWRIC RR-030

**Historical Assessment of Hazardous Waste
Management
in
Madison and St. Clair Counties, Illinois, 1890-1980**

by

Craig E. Colten

with cartography by

Ted B. Samsel

Illinois State Museum

Springfield, Illinois 62706

Printed October 1988



Illinois Department of Energy and Natural Resources

STATE OF ILLINOIS
WILLIAM G. STRATTON, *Governor*
DEPARTMENT OF REGISTRATION AND EDUCATION
VERA M. BINKS, *Director*

DIVISION OF THE
STATE GEOLOGICAL SURVEY
JOHN C. FRYE, *Chief*
URBANA

REPORT OF INVESTIGATIONS 191

GROUNDWATER GEOLOGY OF THE
EAST ST. LOUIS AREA, ILLINOIS

BY

ROBERT E. BERGSTROM AND THEODORE R. WALKER

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STATE OF ILLINOIS
SPRINGFIELD, ILLINOIS



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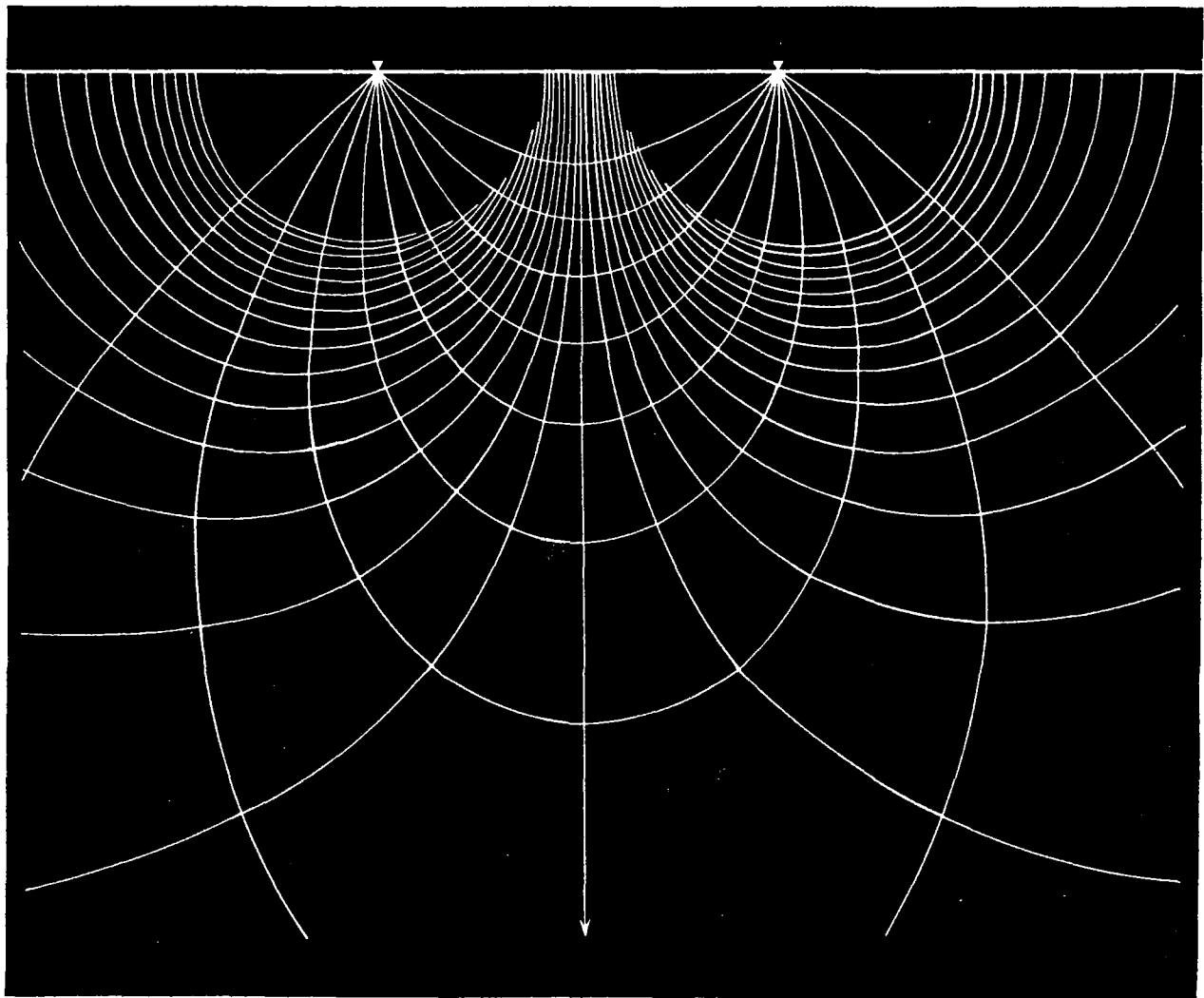
URBANA, ILLINOIS

1956

GEOPHYSICAL ASSESSMENT OF AQUIFERS SUPPLYING GROUND WATER TO EIGHT SMALL COMMUNITIES IN ILLINOIS

Vickie L. Poole and Paul C. Heigold

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OFFICE OF ILLINOIS
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**Illinois Institute of Natural Resources
STATE GEOLOGICAL SURVEY DIVISION
A. Simon, Chief**

**ENVIRONMENTAL GEOLOGY NOTES 91
January 1981**

Hamel

The village of Hamel (population 454) located in north-central Madison County, portions of Secs. 11 and 14, T. 5 N., R. 7 W. (fig. 4), experienced water shortages during the drought of 1976-1977 (Visocky et al., 1978). The population of Hamel is not projected to increase significantly by the year 2000, but according to the State Water Survey the well field was being pumped at or near its practical sustained yield in 1977. It was estimated that the practical sustained yield of the present wells, 75,000 gal/day, would be reduced by more than 10,000 gal/day during periods of drought. The village of Hamel was chosen for a supplemental electrical earth resistivity survey as an aid to siting new municipal wells.

The Hamel area is physiographically situated in the Springfield Plain of the Till Plains Section of the Central Lowland Province. It lies on a slightly rolling ground moraine of Illinoian age. Drainage of the major portion of this area is provided by Silver Creek and its southward-flowing tributaries. Drainage in the far western portion of the area is provided by Cahokia Creek and its tributaries.

The shallow bedrock in the Hamel area consists mainly of shales and limestones of the Pennsylvanian Modesto Formation. If fractured, the limestones at the bedrock surface may be capable of yielding small domestic supplies of water, but they cannot be considered a likely source of moderate to large supplies such as are needed for a municipal supply. The predominant topographic feature of the bedrock surface in the Hamel area is a branch of the buried Macoupin Bedrock Valley, which trends northeast through the center of the area (fig. 4). Bedrock elevations range from slightly less than 400 feet above m.s.l. in the southwestern portion of the valley to almost 500 feet above m.s.l. on its flank. The valley becomes narrower and shallower toward the northeast.

The unconsolidated Pleistocene glacial drift in the Hamel area consists of a complex of ice-laid till, water-laid silt, sand and gravel outwash, and wind-blown silt (loess). The till, water-laid silt, and sand and gravel outwash are pre-Illinoian and Illinoian in age, and the blanketing loess and possibly some sand and gravel outwash are Wisconsinan in age. Drift ranges from 54 feet over shallow bedrock to 163 feet thick over the Macoupin Bedrock Valley. Loess averages a little less than 10 feet thick. Sand and gravel deposits occur at two general intervals within the drift: (1) at depths ranging from 20 to 70 feet in the middle and upper parts of the drift; and (2) at or near the base of the drift in the eastern portion of the study area. The shallower deposits occur mainly as discontinuous lenses and stringers; the deeper deposits, though limited to the eastern portion of the area, are thicker and more extensive.

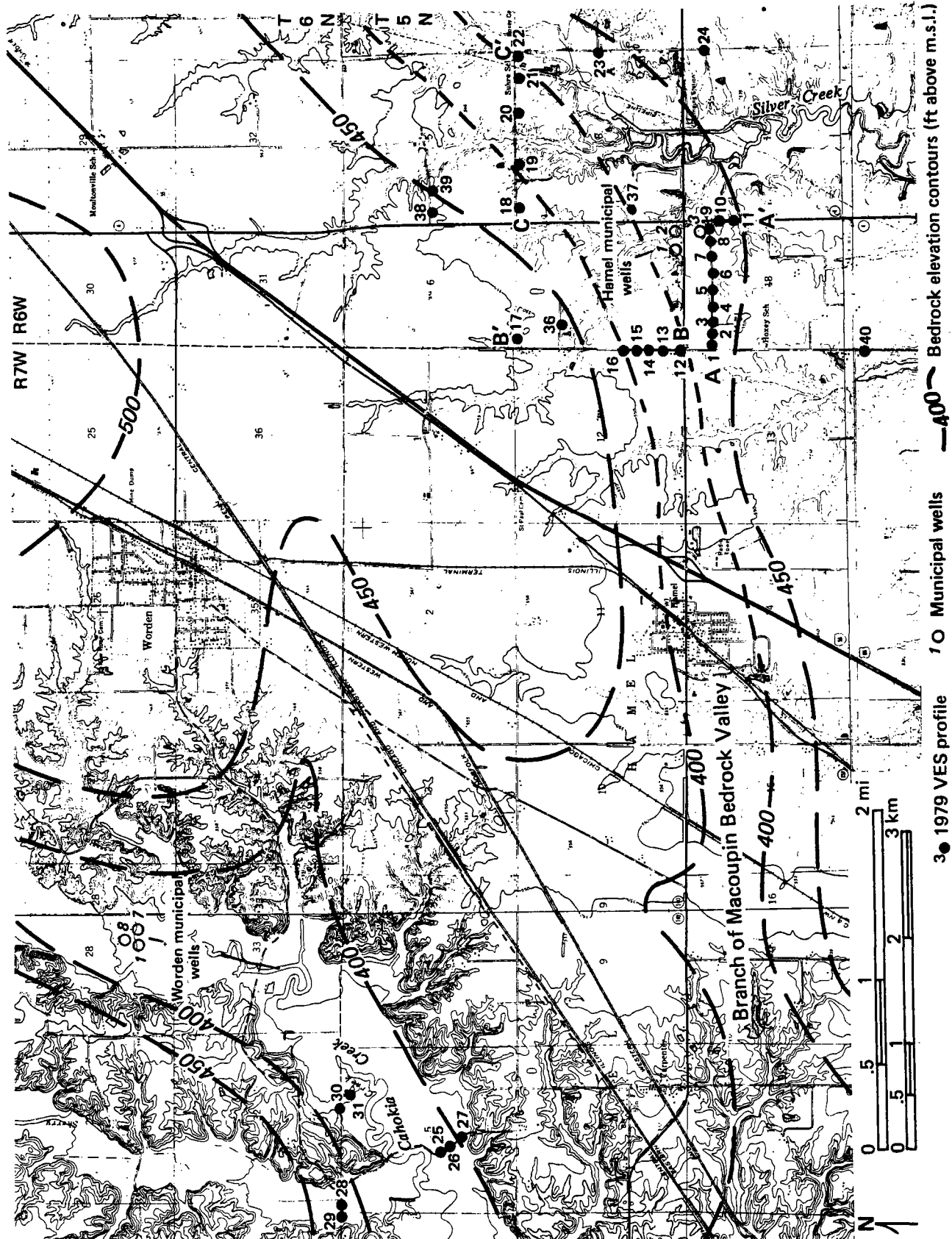


Figure 4. Hamel study area.

The three wells presently providing water for Hamel are located in a 26- to 33-foot thick sand and gravel deposit beneath a tributary to Silver Creek approximately 2 miles east of town in the southeast corner of Sec. 7 and the northeast corner of Sec. 18, T. 5 N., R. 6 W., Madison County (fig. 4). The 26- to 33-foot thickness of sand and gravel observed at the municipal well site is a possible indication of the presence of a branch of the buried Macoupin Bedrock Valley. Municipal Well 1 is located approximately 100 feet north and 700 feet west of the southeast corner of Sec. 7, T. 5 N., R. 6 W. Municipal Well 2 is located 335 feet east of Well 1, and Well 3 is located 469 feet south and 235.5 feet west of the northeast corner of Sec. 18. All wells are drilled to a depth of 110 to 113 feet and are cased to the bottom with slotting between 103 to 111 feet in Well 1 and in the last 20 feet on Wells 2 and 3. The sustained yield of the municipal wells has been calculated to be approximately 86,000 gal/day during years of normal to below normal precipitation and only 73,000 gal/day during periods of drought. At 75,000 gal/day, pumpage of the Hamel wells is considered to be at or near its practical long-term sustained yield.

In their 1978 report, Visocky et al. suggested two ways in which Hamel's present water supply might be supplemented: (1) expansion of the present well field to the south, north, and possibly east; and (2) development of new wells in the glacial drift of the Cahokia Creek bottom in the northwestern portion of the study area. The first suggestion was based on the possible relationship between the aquifer tapped by the current municipal wells and the bedrock channel passing through the region. The second suggestion was based on the fact that the town of Worden, approximately 3 miles to the north of Hamel, obtains its municipal water supply from buried channel deposits of sand and gravel in the Cahokia Creek bottomlands in Sec. 28, T. 6 N., R. 7 W. These deposits are considered likely to continue southward in the Cahokia Creek Valley.

In response to the suggestions of Visocky et al. (1978), supplemental electrical earth resistivity surveying was concentrated around the present well field (mainly within the projected boundaries of the buried bedrock valley) and in Sec. 5, T. 5 N., R. 7 W. in the Cahokia Creek bottomlands.

Interpretation of the resistivity data consisted of construction, examination, and inversion (according to the Zohdy and Bisdorf [1975] inversion technique) of VES curves obtained from VES profiles. The inversion technique provided layering parameters (layer thicknesses and "true" resistivities) for each VES profile. Of particular interest were lines AA', BB', and CC' of VES profiles (figs. 5a, 5b, 5c). These lines were of particular interest because they were thought to cross regions where water-bearing deposits were most likely to occur.

The line AA' of VES profiles (fig. 5a) trends east-west just south of the municipal well field. The VES curves and their inversions indicate a possible expression of the aquifer tapped by the current municipal wells at VES profiles 7, 8, 9, and 10. The inversion of the VES curve obtained from VES profile 5 shows a small, shallow (less than 40 feet from the surface) high resistivity layer that is probably coarse-grained and possibly water-bearing.

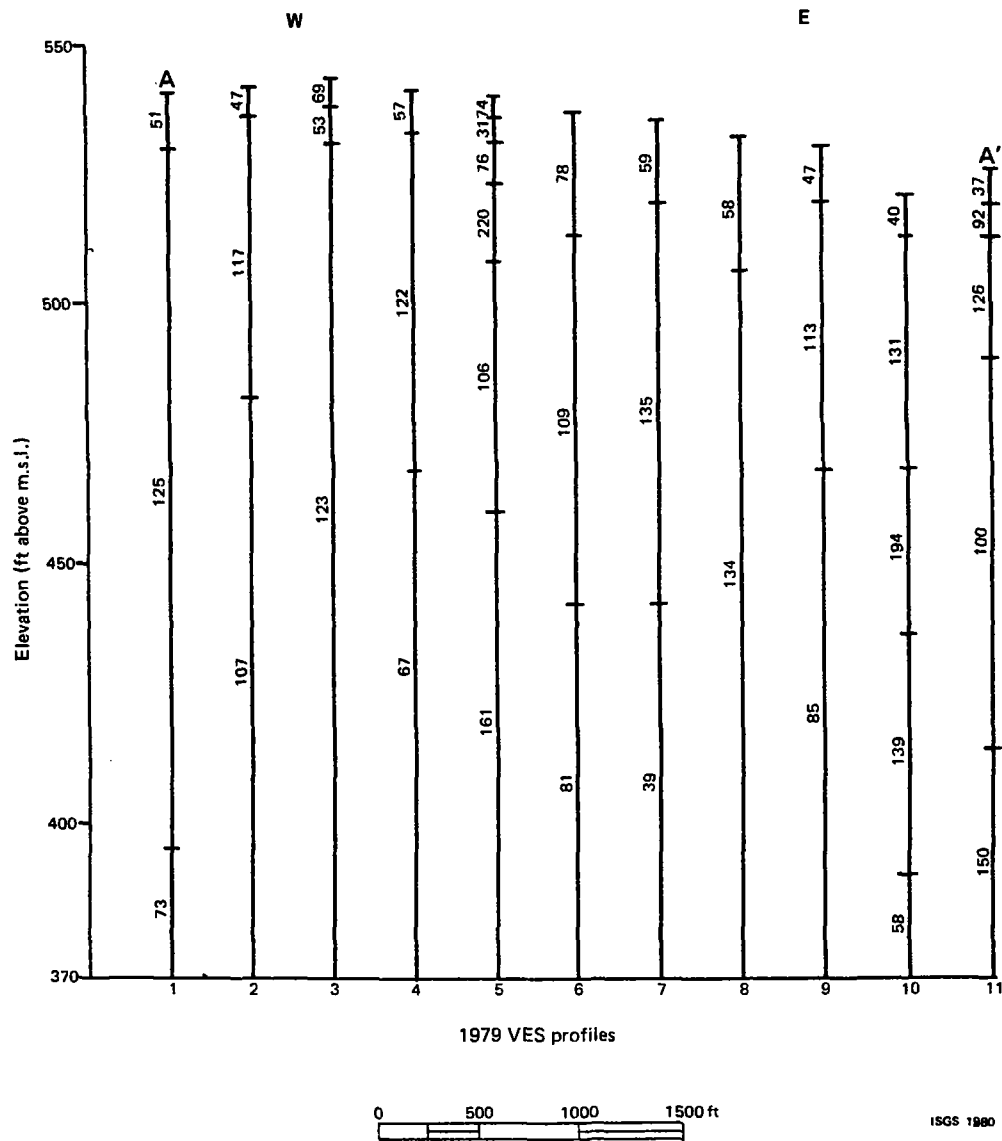


Figure 5a. Hamel study area. Layering parameters ("true" resistivities and thicknesses) determined by inversion of vertical electrical sounding (VES) data along line AA' (see fig. 4). "True" resistivity values are in ohm-feet.

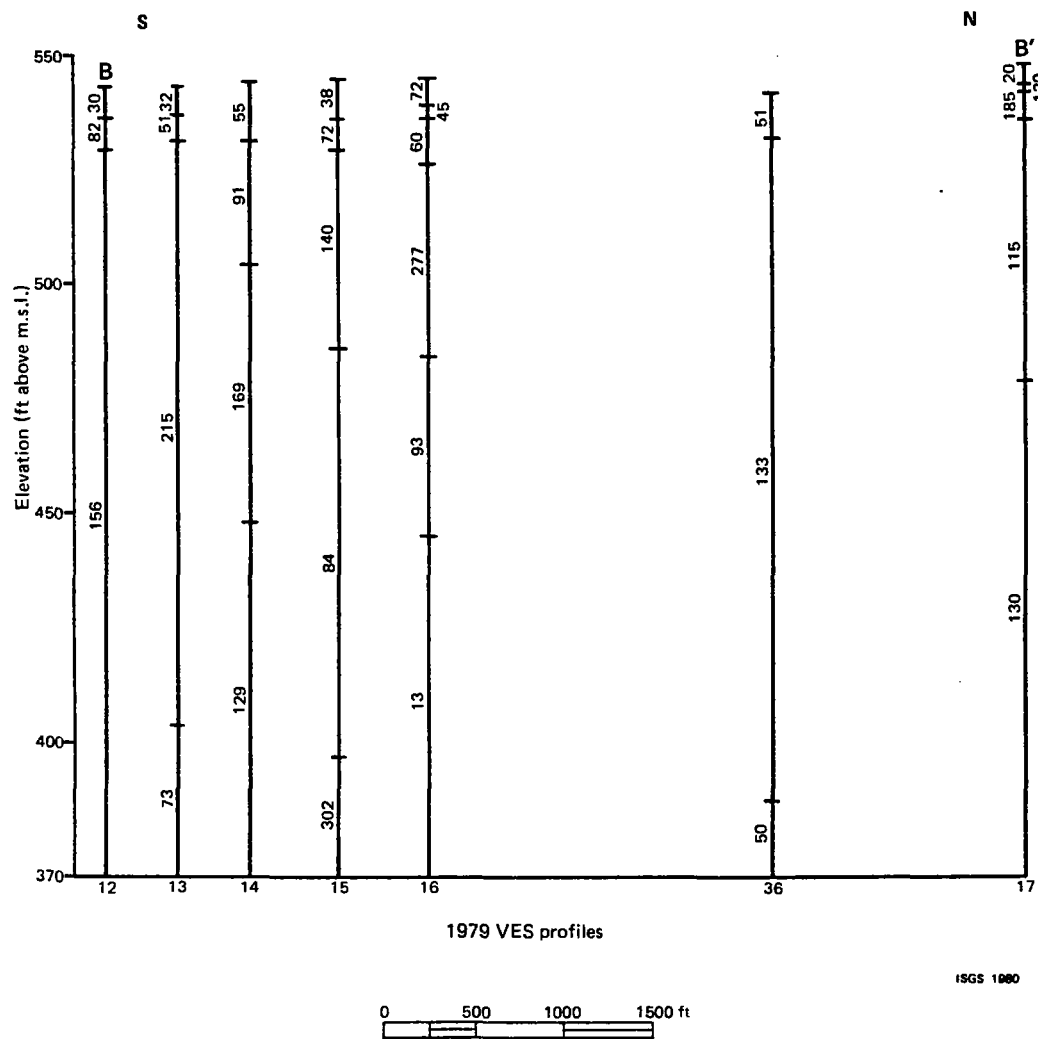


Figure 5b. Hamel study area. Layering parameters ("true" resistivities and thicknesses) determined by inversion of vertical electrical sounding (VES) data along line BB' (see fig. 4). "True" resistivity values are in ohm-feet.

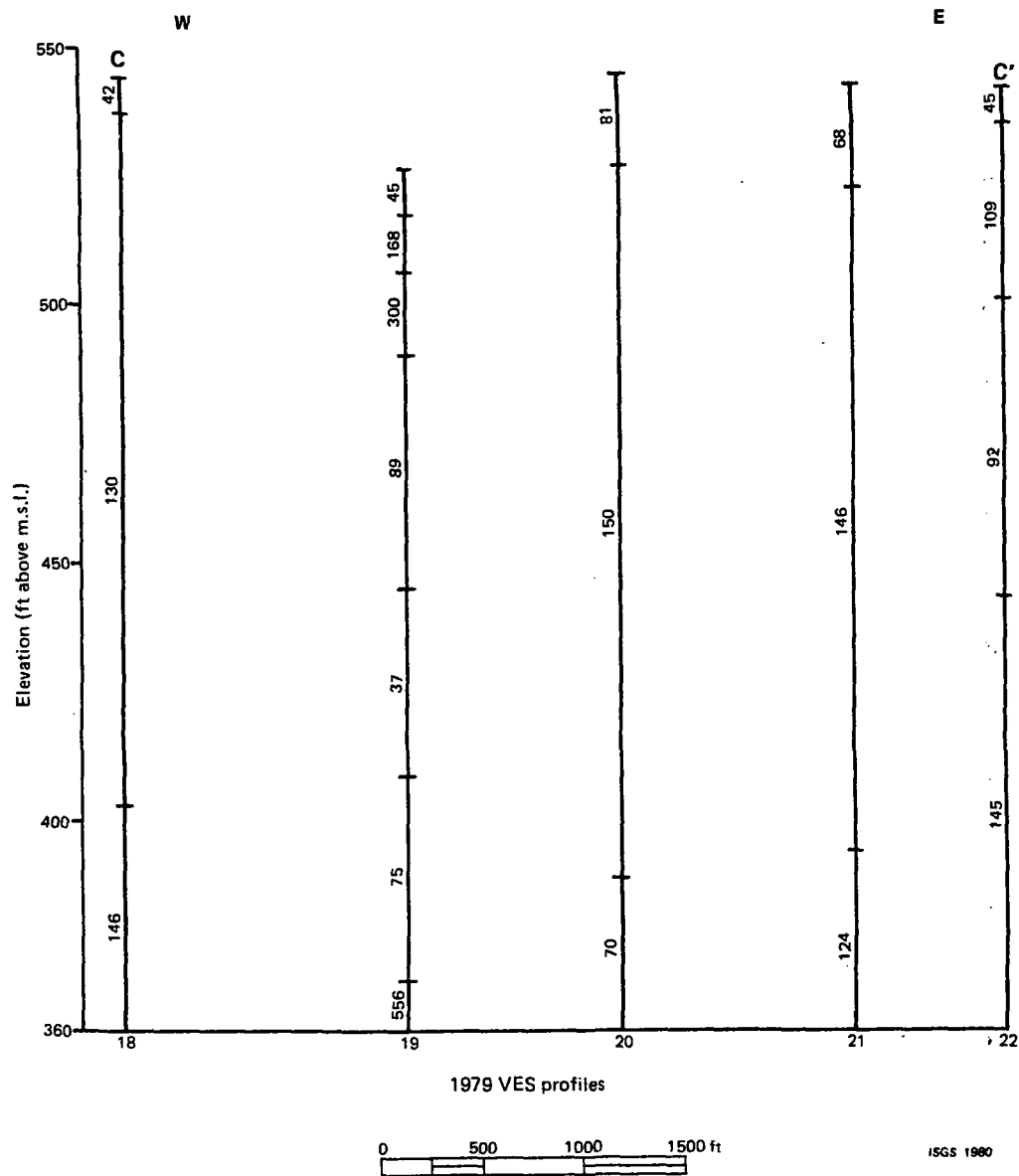


Figure 5c. Hamel study area. Layering parameters ("true" resistivity and thicknesses) determined by inversion of vertical electrical sounding (VES) data along line CC' (see fig. 4). "True" resistivity values are in ohm-feet.

The north-south line BB' of VES profiles (fig. 5b), along the western side of Sec. 7, T. 5 N., R. 6 W., transects the width of the bedrock valley shown by Visocky et al. (1978). Both the VES curves and their inversions substantiate the presence of this valley below VES profiles 12 through 16. Apparent and "true" resistivity values, which are significantly greater here than elsewhere in the area, are indicative of coarse-grained, water-bearing deposits within the bedrock valley.

The east-west line CC' of VES profiles (fig. 5c), is located along the north line of Sec. 8, T. 5 N., T. 6 W. Well data in this area, although sparse, show that the buried bedrock valley turns to the northeast and becomes narrower and shallower in that direction. As a result, the eastern end of this line of VES profiles may lie within the lateral boundaries of the valley although the western end of the line may not. The VES curves and their inversions, obtained from the VES profiles along line CC', do not conclusively indicate the position of the buried bedrock valley. Apparent and "true" resistivity values associated with the unconsolidated deposits along line CC' are slightly greater than those along line AA', but are less than the most promising values along line BB'.

Resistivity data collected in the Cahokia Creek bottomlands indicate that sand and gravel deposits, similar to those from which the town of Worden obtains its current water supply, are present and likely are continuous to the north and the south of the Worden municipal well field. "True" resistivity values of the unconsolidated deposits in the Cahokia Creek bottomlands are equal to or greater than the values associated with the unconsolidated deposits along line BB' (fig. 5b).

In summary, there are two promising locations for test drilling for future municipal well sites: (1) at VES profile 13 or 16 along line BB' in the southwestern portion of Sec. 7, T. 5 N., R. 6 W.; and (2) in the Cahokia Creek bottomlands south of the Worden municipal well field. The first site should be the primary choice owing to its position less than a mile from Hamel's current well field and its proximity to Hamel. The second site would likely have greater water-producing capability, but in addition to the disadvantage of its greater distance from Hamel, any water-supply wells would have to be located to avoid mutual interference with those serving Worden.

Worden

The village of Worden (population 1,019), located in north-central Madison County, portions of Secs. 26 and 35, T. 6 N., R. 7 W. (fig. 16), was also identified in a joint assessment of public ground-water supplies in Illinois as having experienced water shortages during the drought of 1976-1977 (Visocky et al., 1978). The population of Worden is not projected to increase by any significant amount by the year 2000; however, it has been estimated that the practical sustained yield of Worden's present wells is reduced by approximately 50 percent during periods of drought. The village of Worden was chosen for a supplemental electrical earth resistivity survey during 1979 as an aid to siting new municipal wells.

Physiographically, the Worden area is situated in the southwest portion of the Springfield Plain of the Till Plains Section of the Central Lowland Province. It lies on a gently rolling ground moraine of Illinoian age and has a regional slope of 5 to 10 feet per mile to the south-southwest. Drainage of the major portion of the area is accomplished by numerous, small, westward-flowing tributaries to the southward-flowing Cahokia Creek, which passes 2 miles to the west of Worden. The maximum topographic relief of the area is 160 feet. Most of it is due to the moderate dissection of the ground moraine by Cahokia Creek and its tributaries.

The shallow bedrock in the Worden area consists of shales, claystones, sandstones, and limestones of the Pennsylvanian Modesto Formation. Where present, fractured limestones and sandstones near the bedrock surface are sources of small, domestic supplies of water. These rocks are not considered a likely source of moderate to large quantities of water such as are needed for a municipal supply. The most prominent topographic feature on the bedrock surface in the Worden study area is a bedrock valley system which is generally coincident with the present day Cahokia Creek (fig. 16). Bedrock elevation in the study area ranges from slightly less than 400 feet above m.s.l. in the Cahokia Creek bottomlands to slightly more than 500 feet above m.s.l. in the east-northeast portion of the study area.

The unconsolidated Pleistocene glacial drift in the Worden area consists of a complex of ice-laid till, water-laid silt, sand and gravel alluvium, and wind-blown silt (loess) of Illinoian and Wisconsinan age. Drift varies from 10 to 70 feet thick on the upland surfaces to 45 to 70 feet in the Cahokia Creek bottomlands. The Wisconsinan-age blanketing loess varies from 6 to 10 feet thick. Sand and gravel deposits within the drift on the uplands are scarce and occur only as stringers inches thick and of extremely limited areal extent.

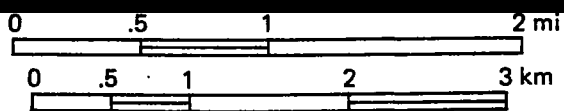
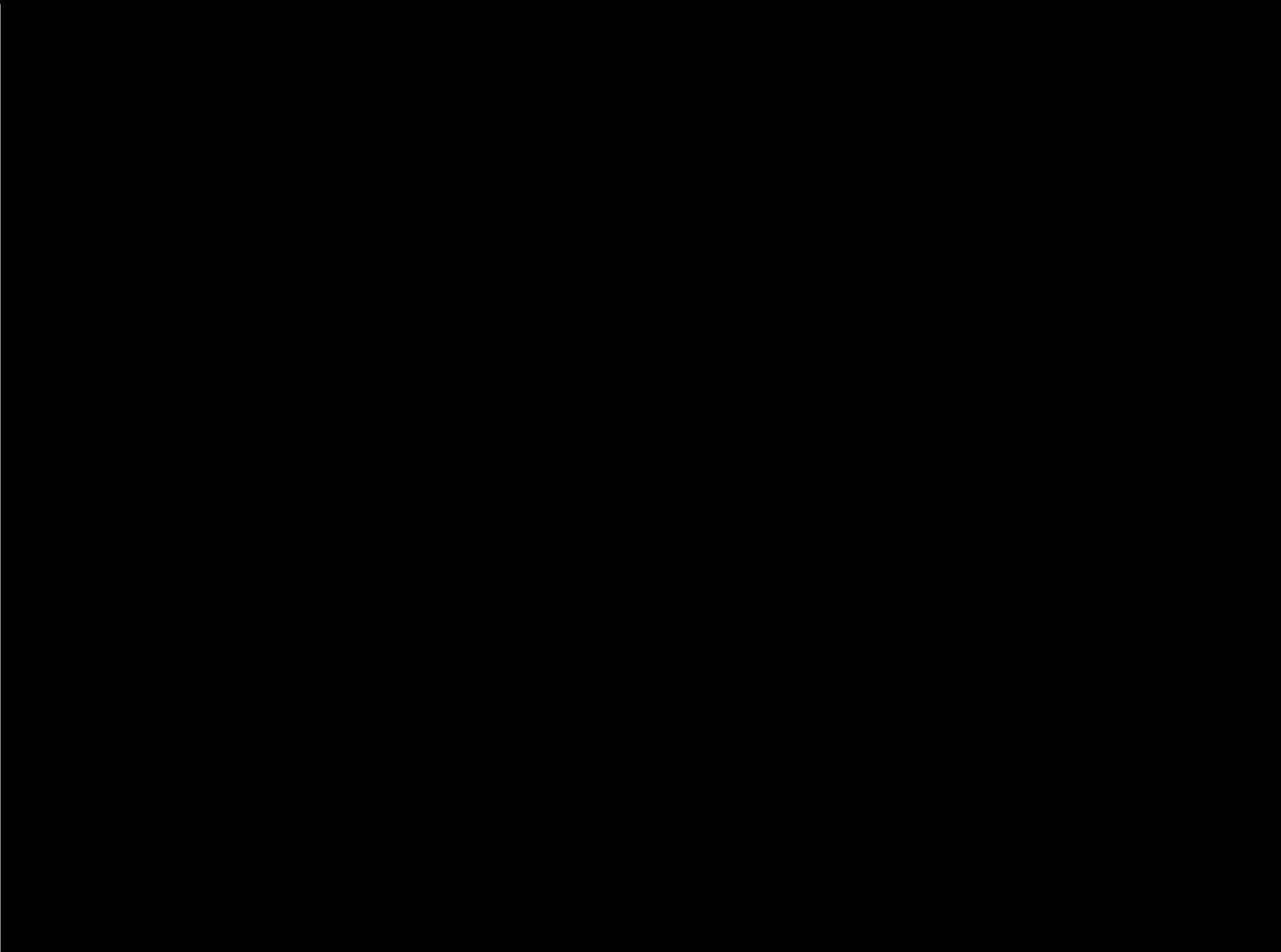
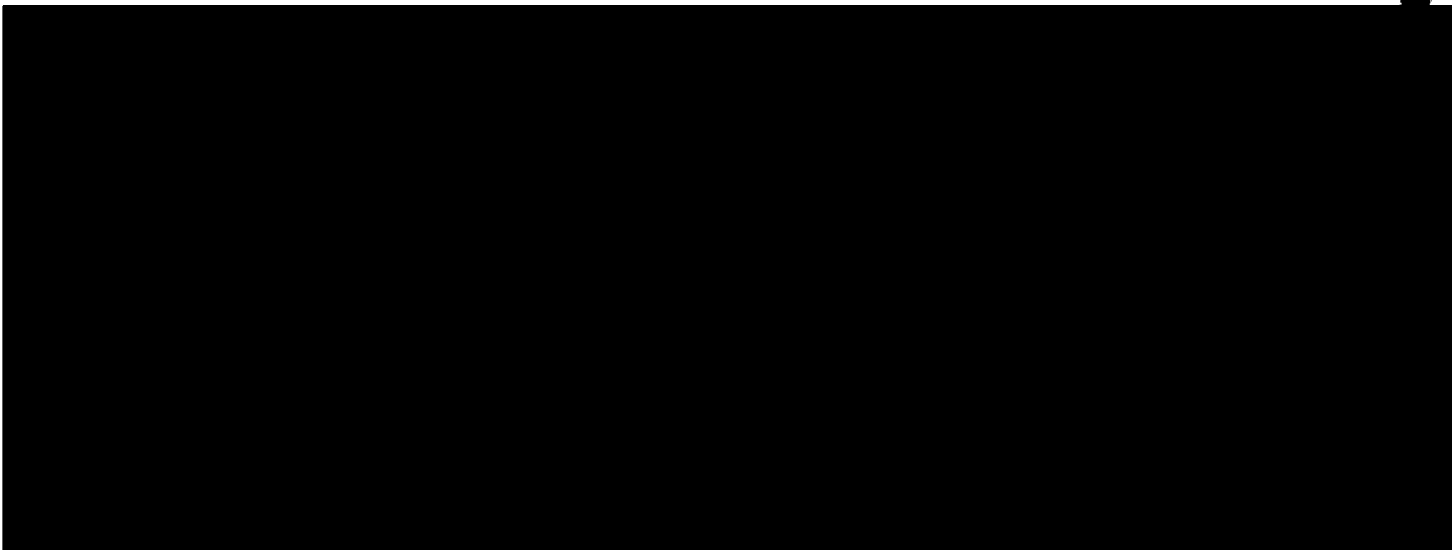


Figure 16. Worden study area.

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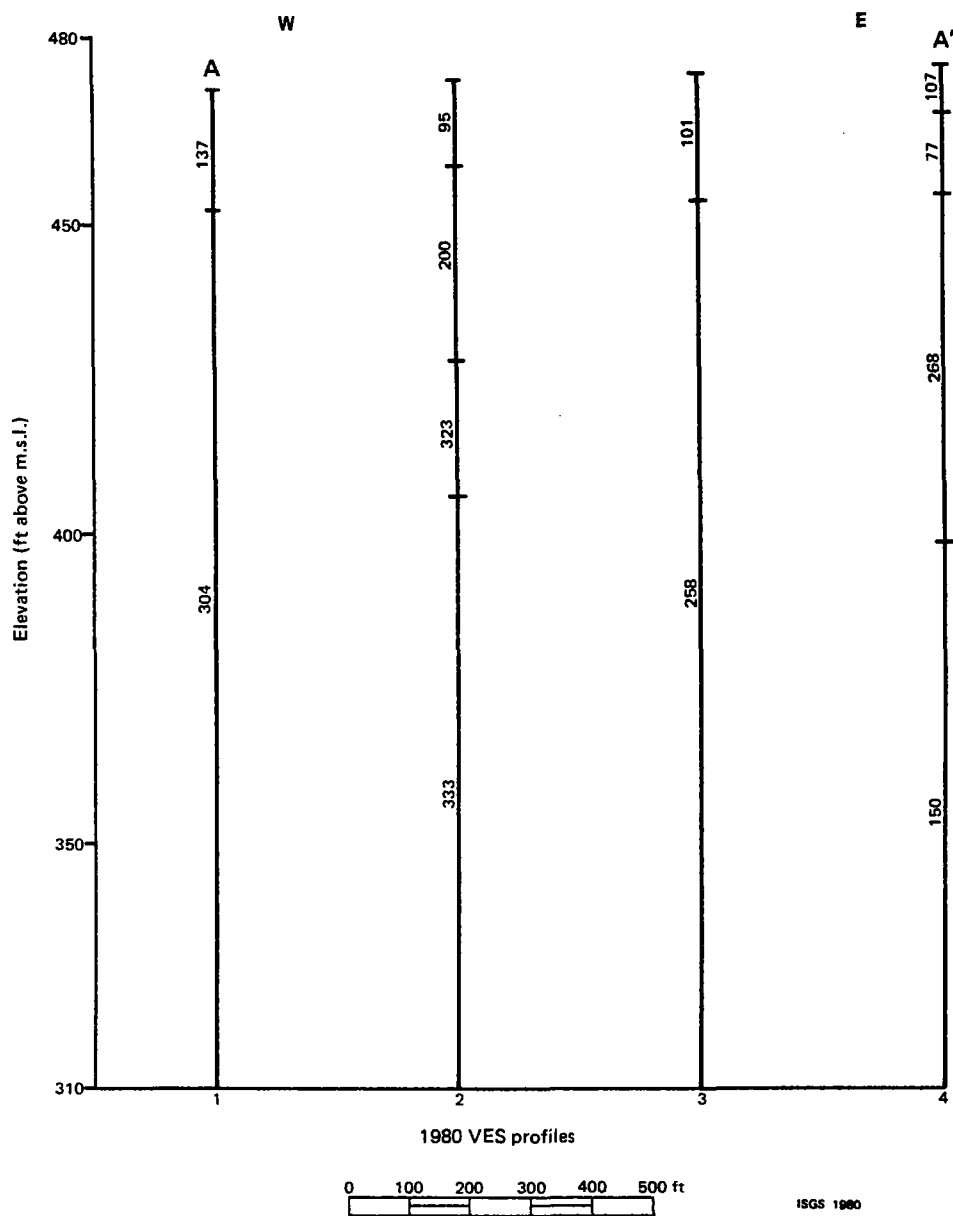


Figure 17a. Worden study area. Layering parameters ("true" resistivities and thicknesses) determined by inversion of vertical electrical sounding (VES) data along line AA' (see fig. 16). "True" resistivity values are in ohm-feet.

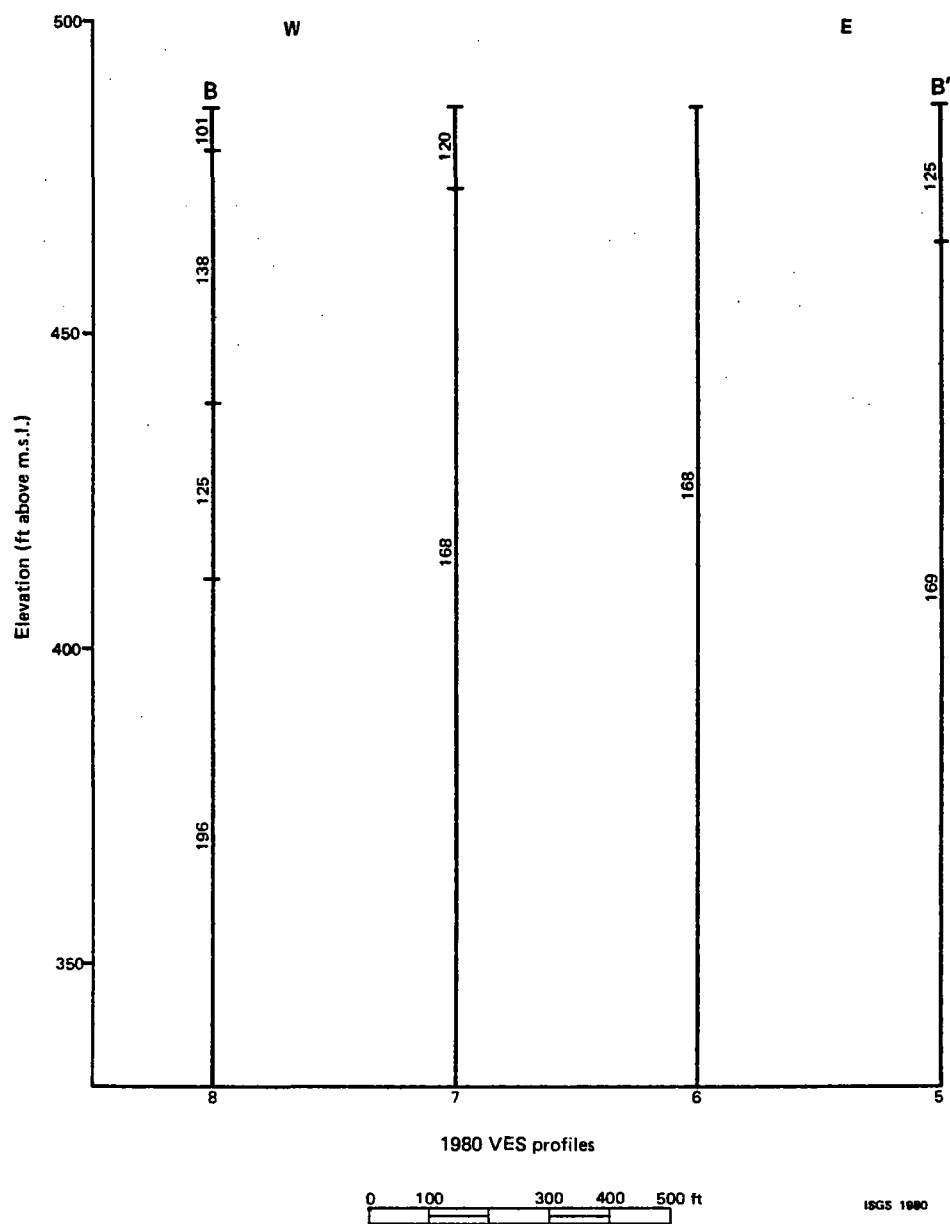

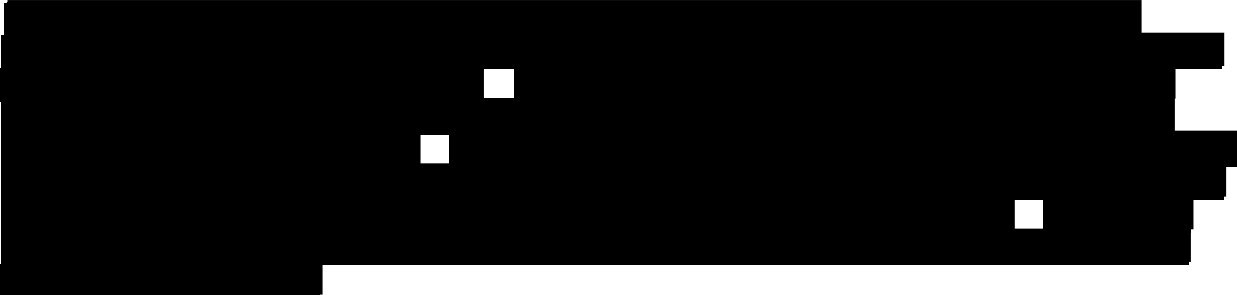


Figure 17b. Worden study area. Layering parameters ("true" resistivities and thicknesses) determined by inversion of vertical electrical sounding (VES) data along line BB' (see fig. 16). "True" resistivity values are in ohm-feet.



These low resistivity values, typical of fine-grained deposits, indicate that this line of VES profiles is probably not located above the buried bedrock channel deposits.

The other VES data collected in 1979-1980 did not show apparent or "true" resistivity values large enough to be indicative of coarse-grained, water-bearing deposits.





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Protection Agency

Division of Public Water Supplies
2200 Churchill Road
Springfield, Illinois 62706

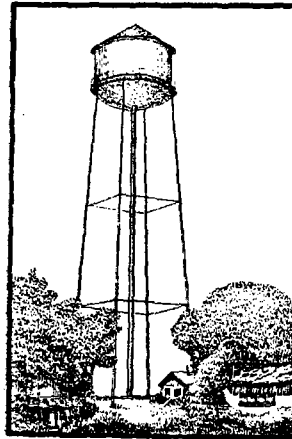
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Number 4**

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Springfield, Illinois

Groundwater Quality Protection Program

HAMEL
FACILITY NUMBER 1190450
WELL SITE SURVEY
REPORT

Division of Public Water Supplies





Illinois
Environmental
Protection Agency

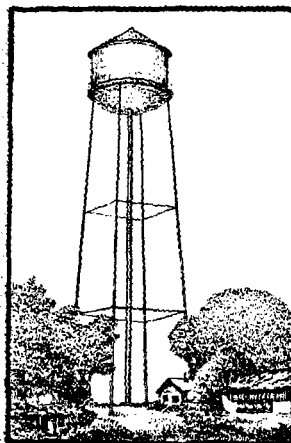
Division of Public Water Supplies
2200 Churchill Road
Springfield, Illinois 62706

**Reference
Number 5**

Groundwater Quality Protection Program

TROY
FACILITY NUMBER 1191000
WELL SITE SURVEY
REPORT

Division of Public Water Supplies








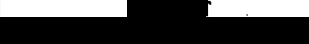
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Springfield, Illinois

EDWARDSVILLE TOWNSHIP

MAP No. Reference
Number 6

Taxing District EDWARDSVILLE

N1/2

Block	Subdivision
	
	
	

Owner

Acres Date

Kettle River Co.	47.82	Mar. 58
Assecoan Treating Corp 2047/135	53.57	
Charles Britches 2060/193	52.24	
David Stein 2307/31 8-16-64	59.16	Corrected Acres
Norman & Emilie Imber 2304/491 8-17-64	55.66	
	50.06 AC	
Norman & Emilie Imber (QCD) 253/1556 12-27-67	45.06 AC	
MERRILL OTTWEIN 2722/569 12-2-70	38.56	
Lakewood Dev. Inc. 12-12-72	2878/25	
NOW Kettle River III 43/29 1973	38.5 AC	
	3.44 AC.	NOW PL # 1151 E
	35.06 AC.	PB 51/33 7-1-80

Owner

Acres


Date

LAKWOOD DEV, INC. 2378/25 12-14-72		
"NOW KETTLE RIVER III" PL # 43/29 REG 9-11-73		
CONT. 38.5 AC.	35.06 AC	
	- 1.01 AC.	NOW PL # 1151 E 2-23-90
	34.05 AC.	

EDWARDSVILLE TOWNSHIP

MAP No. SW 23-4-8

Taxing District EDWARDSVILLE

Block	Lot	Subdivision	E PTN 1/2 SW
			

Street No.

Municipality

Owner

Acres

Date

Lakewood Development Inc	2773/310 8-16-71	3.50	
Kettle River	8-17-71 41/13		8-23-71

EDWARDSVILLE

Block

Lot

Subdivision

Street No.

Municipality

Owner

R. W. HARMON & SONS INC. 2879/511 12-22-72

Acres**Date**

Lakewood Development, Inc	2908/697	5-9-73 3-1-79
Kettle River II		421

2908/699 3-1-79

42/80

5 ac.

11.5Ac

1.13 Ac.

10.37 Ac.

4-17-73

11/11/71

PG 51133

7-1-80

EDWARDSVILLE TOWNSHIP

MAP No. SW 23-4-8

Street No.

Municipality

Owner

PLAT OF A RESUBDIVISION OF LOT 15 & PT OF LOT 16 IN
KETTLE RIVER II, AND LOTS 21, 22 & 23 KETTLE RIVER III

PB 51/33 REC. 7-1-80 CONT. 4.57 AC. CALCUL

3.44 Ac. From TL # 1151

1.13 Ac. From TL # 1151D

4.57 Ac.

Street No.

Municipality

Owner

Acres

Date _____

Kettle River Co.

~~29.14~~

Mar. 58

American Creativity Corp 2047/135	12-30-60
Charles Breitenweiser 2060/193	1-5-61
Donald W. ... 2047/131 8-14-61	3-18-61
	3-20-61

12-30-60

1-5-61
3-18-61

3-20-61

31 70

connected

Acres

100

STATE OF ILLINOIS
WILLIAM G. STRATTON, Governor
DEPARTMENT OF REGISTRATION AND EDUCATION
VERA M. BINKS, Director



GROUNDWATER GEOLOGY IN SOUTH-CENTRAL ILLINOIS

A Preliminary Geologic Report

Lidia F. Selkregg
Wayne A. Pryor
John P. Kempton

*Service activities concerning groundwater are performed
jointly by the Illinois State Geological Survey
and the Illinois State Water Survey.*

DIVISION OF THE
ILLINOIS STATE GEOLOGICAL SURVEY
JOHN C. FRYE, Chief URBANA

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STATE OF ILLINOIS

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Macoupin County

Sand and gravel deposits are rare in the thin glacial drift so that chances of obtaining groundwater supplies with drilled wells above bedrock are poor. Sand and gravel deposits are present locally in the valleys of Otter Creek and Bear Creek and in the partially buried valley of Macoupin Creek. In most of the county, water from the drift is obtained with large-diameter dug wells. Because seasonal variations in water levels affect these shallow wells they should be made as deep as possible in the glacial drift, preferably to the top of the bedrock.

In the northern part of the county, water for farm and domestic supplies is obtained from shallow Pennsylvanian sandstones at depths ranging from 70 to 200 feet below land surface. Because of the unfavorable groundwater possibilities in the drift it is recommended that wells be drilled into the upper 50 to 150 feet of bedrock throughout the county. Domestic and farm supplies may be obtained locally from thin sandstone beds or from fractured shales, coals, and limestone beds.

Madison County

Excellent water-yielding sand and gravel deposits suitable for the construction of high-capacity wells occur at many places in the Mississippi River Valley at depths below 50 to 75 feet. Because of lateral variations in texture within the river sediments, construction of high-capacity wells at any particular site should be preceded by a small-diameter pilot hole to test the suitability of the deposits. Drillers report that sand and gravel deposits are thin and discontinuous in a band at the base of the bluffs, especially in the area southwest of Glen Carbon. In the area of Horseshoe Lake, the valley fill is composed mostly of fine sand and is not as favorable a source of water as in other parts of the valley. Details on the river sediments in the Mississippi bottomlands are given in Illinois State Geological Survey Report of Investigations 191.

In the flats of both the East Fork and West Fork of the Wood River and of Cahokia Creek, sand and gravel deposits are favorable local sources of groundwater for domestic, farm, and larger supplies, but locating suitable sites for wells may require extensive testing.

Thin deposits of glacial drift are present on the upland throughout Madison County. In some places thin beds of sand and gravel within the till may furnish enough water for small domestic supplies. These local sand and gravel deposits generally are found near the base of the till but because of their discontinuity they cannot be predicted prior to drilling. Many of the wells on the uplands are large-diameter dug wells that penetrate to the base of the loess and obtain water at the contact between the loess and the underlying till.

The bedrock, although in part capable of producing large quantities of groundwater, is of negligible importance in the Mississippi Valley flat because of the excellent possibilities in the shallower sand and gravel deposits. On the upland, however, in many areas the bedrock is the only groundwater source.

Thin sandstone beds, present in the Pennsylvanian system in general, are suitable only for domestic supplies. The Mississippian limestones and sandstones are favorable sources of groundwater where they are encountered at

shallow depths. The St. Louis limestone is a favorable source of water for farm and domestic supplies west of Godfrey, where it is encountered immediately below the drift, and in the area between Godfrey and Fosterburg, where it is encountered at depths ranging from 125 to 175 feet below land surface. In Ts. 3, 4, 5, and 6 N., R. 8 W., Pennsylvanian and Chester sandstones are potential sources of groundwater, and wells are finished at depths ranging from 100 to 400 feet below land surface. In the southeastern part of the county, wells are finished in Pennsylvanian sandstones at depths ranging from 100 to 250 feet below land surface.

Marion County

Sand and gravel deposits are scarce over much of Marion County, particularly in the eastern and southern parts where the drift is thin. Bedrock crops out in many places throughout the county.

A buried valley is present in the west-central part of the county (fig. 6, area outlined by dashes). This valley has thick deposits of unconsolidated material, and scattered well records report the presence of thick sand and gravel. Although the character of these sand and gravel beds is not known, the area is worth exploring for industrial and municipal supplies. Thin, discontinuous deposits of sand and gravel are associated with tributary streams of the Kaskaskia River in the northwestern part of the county.

In limited areas Pennsylvanian sandstones are a source of groundwater, particularly southeast of Salem. Where the sandstone occurs (fig. 7), farm and domestic supplies may be obtained from the upper 150 feet of the bedrock or, locally, in the upper 200 feet.

Monroe County

Thick deposits of sand and gravel suitable for municipal and industrial supplies are present in the Mississippi Valley flat with the exception of a narrow band at the base of the bluff, where sand and gravel deposits are discontinuous. Because of variations in texture within the river sediments, construction of high-capacity wells at any particular site should be preceded by testing to locate suitable sand and gravel deposits. (Details on the river sediments in the Mississippi bottomlands are given in Illinois State Geological Survey Report of Investigations 191). The upland is covered by thin glacial deposits that are unfavorable for the construction of drilled wells.

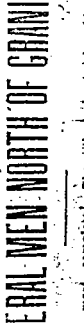
Wells drilled into the bedrock obtain water from limestones and sandstones of the Mississippian system. The St. Louis limestone, which forms the sink-hole topography north and south of Renault and west, southwest, and northwest of Waterloo, is the source of water for a large number of domestic and farm supplies throughout the county. This formation is encountered immediately below the surface or below a thin cover of glacial drift in Ts. 2, 3, and 4 N., R. 10 W., and dips eastward to depths ranging from 300 to 500 feet below land surface in T. 3 S., R. 8 W. Because of the danger of pollution in wells that penetrate shallow cavernous limestone, wells in the St. Louis formation must be constructed with special attention to sanitary practices (Education Health Circular 14, Department of Public Health, Springfield). The Burlington-

Delays Their Wedding



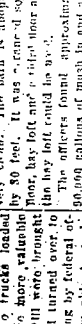
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HEAT CAPACITY WRECKED



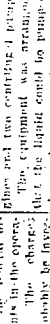
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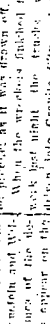
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TO BEGIN BUILDING ORGANIZE TONIGHT W. T. MORTON DEAD



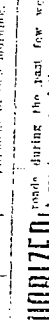
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TO SUBMIT CLAUSES



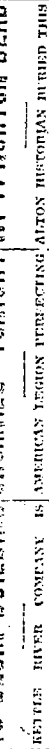
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AMERICAN LEGION PERFECTING ALTON HISTORIAN HURD THIS AFTERNOON



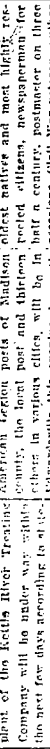
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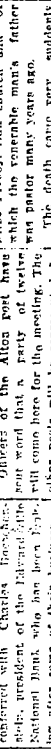
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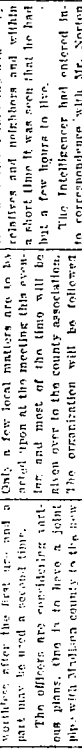
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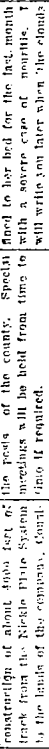
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WILBUR T. MORTON, ONE OF ALTON'S OLDEST NATIVES AND MOST HIGHLY REVERED CITIZENS, NEWSPAPERMAN FOR HALF A CENTURY, POSTMASTER ON THREE OCCASIONS, CIVIL WAR VETERAN, AUTHOR OF THE MADISON COUNTY CONSTITUTIONAL HISTORY AND ONE OF THE AUTHORITY ON HISTORY ON ALTON, MADISON COUNTY AND ILLINOIS WAS BURIED THIS AFTERNOON FOLLOWING SERVICES CONDUCTED BY REV. E. L. GIBSON, PASTOR OF THE FIRST PRESBYTERIAN CHURCH AND OF WHICH THE VENERABLE MAN'S FATHER WAS PASTOR MANY YEARS AGO.



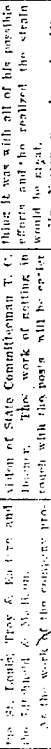
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LEO KORETZ, OIL BUBBLE PROMOTER, DIES IN PENITENTIARY



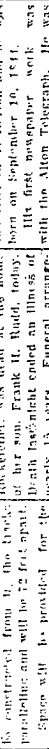
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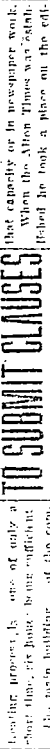
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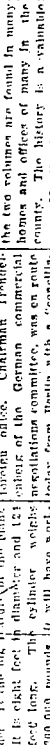
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class of 1901.
Dr. and Mrs. Bost left their two older sons in a school in China but he, at with them the two younger ones. The exact cause of Mrs. Bost's illness is not known but it is thought that the climate in China has not been healthy and it is hoped that she will improve greatly while in the United States.
She has many friends here who will be interested to learn of her.

Officers Are Elected.
The Trinity Lutheran Ladies Aid Society met yesterday and elected their officers for the coming year. An interesting meeting was enjoyed. The officers elected were as follows: Mrs. Otto Sinsch, president; Mrs. William O'Brien, Jr., secretary; Mrs. Louise Spitz, treasurer; Mrs. Chas. Isenberger, Mrs. E. W. Jahn, Mrs. Henry Klein and Mrs. Johanna Schottel, on the sick visiting committee; Mrs. Adolph Weire, Mrs. Jule Thake and Mrs. Harry Feldner, visiting committee; and Mrs. Christ Eilers, Mrs. E. W. Jahn and Mrs. Arnold Seidichte, Orphan Society delegates.

To Broadcast From Theatre.
Mrs. Ed Appel received word today that her brother-in-law, Edward Dunsieder, well-known organist and musician, will broadcast every Friday evening from Station WCCO, at Minneapolis, Minn. The entire program of the State Theatre will be presented over the radio and will begin at 7:30 p. m. each Friday night. Mr. Dunsieder is an expert on church and theatre piano-organ work and these programs will be heard by many of his Edwauville friends with great enjoyment.

Dance Is Planned.
A dance is being planned by the members of the American Legion Auxiliary to be given at the Wilkey Theatre on January 21. Dancing will begin at 8 o'clock and music will be furnished by Travers' Orchestra.
Dances by the Auxiliary are greatly enjoyed by those who attend and a large attendance is expected. Invitations are extended in cordial invitation.
Is Excellent Chess Player.
R. A. Alpkner of St. Louis, a high local team in what is expected to be the champion of this city, an exciting game. It will be played with the Alpkner team.

with Mr. Alpkner of the champion team in the Alpkner game.
C. J. Prince and W. M. Wagner of St. Louis succeeded in making decisions over the champion team. Games were played at the Alpkner Hotel.
Plan To Give Play.
Members of the Eden Lancers, a local team, are making preparations for a play which they are planning to give at the Wilkey Theatre on Thursday evening, January 24, at 8 p. m.
The play will be a comedy in three acts with the title of "And How Come That?" An interesting cast of characters has been selected and the play promises to be one of the best ever given by members of the Eden Lancers. The seats will be reserved on January 29 and 31 after 9 a. m.

Company To Have Meeting.
The annual meeting of the Farmers' Mutual Fire Insurance Co. will be held at Winkley's hall in Alpkner on Tuesday, January 22, beginning at 10 o'clock.
Important business transactions will be taken up and the officers for the coming year will be elected. The retiring directors are H. C. Hennrich, F. A. Weitzel and J. F. Meyer. The secretary is Adolph Weitzel.

Plan Masquerade Dance.
A masquerade dance is being planned by the JCH lodge of Glen Carbon Crossing to be given at the Glen Carbon hall on Saturday, January 31. There will be national music and prizes will be awarded to the person wearing the most comical costume. The admission will be 85 cents for couples and 10 cents for ladies.

Will Attend Dance.
Several couples from Edwauville will go to East St. Louis tomorrow evening to attend the "Ladies Night Entertainment" being at Alpkner Temple A. A. O. N. M. E. Dancing will start at 8:30 o'clock and a good time is anticipated by everyone.
Game This Evening.
The Glenville High School basketball team will journey to Edwauville this evening to play the local team in what is expected to be a local game. It will be played with the Alpkner team.

Alpkner H. A. Baker of Alpkner was a visitor in Edwauville today. Attorney M. A. Sch of Collinsville was a guest, and a visit yesterday.
Mr. John Towner of Stanton and several days than a visit in Edwauville.
Mr. and Mrs. Tom Ladd went to Edwauville yesterday where they attended the funeral services for Mr. Ladd's uncle, William Kasner.

TO BE BUILT
(Continued from page one).
After the order is placed, employment of more men is one of the questions of interest to many. The officers yesterday said that the force at the beginning will be composed of about 75 persons and as the construction continues and the company reaches a greater number of men the force will naturally be increased. A maximum force of 200 is expected to be probably 200.
The operation of the plant is of a regular system. Nearly a year will pass before the first box can be shipped. The supply of men will be ready and the first stock filled up must ready for the first set.

The company owns a tract of 315 acres and the initial unit of the plant will occupy about 75 acres. The land was purchased by the company during the late summer and the officers have since been working on a program of operation. Virtually all of the details have been passed upon and the actual construction will be under way in the very near future.
It is understood that in the Edwauville plant the company will embody all the newest features that have been discovered in that particular line of work and that the local institution will be made a model of its kind in every way. It is excellently located, and realizing this the company will leave nothing unaccomplished and equipment, a structure of which Edwauville may be justly proud.

Photo 40 or 51—That was ad.

Various Portland Cement Companies.
Universal Portland Cement Company, Chicago, 500,000.
Atlas Portland Cement Company, Chicago, 700,000.
Lehigh Portland Cement Company, St. Louis, 700,000.
Missouri Portland Cement Company, St. Louis, 250,000.
Indiana Portland Cement Company, Indianapolis, 200,000.
Marquette Portland Cement Company, Chicago, 700,000.
Alpha Portland Cement Company, Chicago, 450,000.
Monarch Cement Company, Marshall, Kan., 100,000.
Louisville Portland Cement Company, Louisville, Ky., 207,000.
Frederick Portland Cement Company, Fredonia, Kan., 110,000.
Kosmos Portland Cement Company, Louisville, Ky., 20,000.
Dewey Portland Cement Company, Kansas City Mo., 50,000.
Northwestern States Portland Cement Company, Mason City, Ia., 50,000.
Sandusky Portland Cement Company, Cleveland, 155,000.

Gas Explodes.
Cincinnati, Ohio Jan. 9.—More than a score of persons were injured and the lives of hundreds were imperiled in an explosion of natural gas at a looster station yesterday.

W. T. NORTON DEAD
(Concluded from page one).
ed they would make a dozen or more large volumes.
Some years ago he was urged to write a history of Alton for use in the public schools. He took a particular interest in educational lines and served as a member of the Board of Education for a number of years.
Mr. Norton is survived by his widow to whom he was married in 1875 and they had hopes of observing the golden anniversary this year. There is one daughter, Miss Isabelle Norton and two sons, Augustus T. Norton and Frederick Norton. The latter being employed on the Alton Telegraph.

Fourteen Leap to Safety.
Youngstown, Ohio, Jan. 9.—Fourteen persons leaped to safety in emergency nets stretched by firemen when their escape from the second floor of a burning house was cut off by flames here today.

"BEING"
The Odd Fellows will have charge of the services at the grave and a string of officers of Edwauville No. 1, 2, The American Legion will have the last rites of the Legion. Those who have been selected as pallbearers are: Judge J. E. Hilkottter, W. L. Eschbrook, Louis Hartung, Fred W. Herrick, Attorney Ford Tunnell and E. F. Koch.
Mr. Honner's last illness came on Tuesday before Christmas while he was sitting in a park with his daughter and several other Civil War veterans. A large number of old soldiers winter in Jacksonville and Mr. Honner became acquainted with quite a few.

He complained of his heart and believed it was one of the spells with which he had suffered on many occasions. Mr. Honner and his daughter returned home and a doctor who treated him during the year was called.
After a few days the heart troubles cleared up but stomach troubles developed. The doctor, his daughter and others noticed he was holding his own until Tuesday of this week and that morning an alarming change for the worst developed. During the afternoon he had a sinking spell and passed away.

AUTO SLIGHTLY DAMAGED IN ACCIDENT YESTERDAY
Automobiles owned to Mrs. Thos. Williamson and Louis Ashauer were slightly damaged yesterday afternoon in an accident which occurred near the corner of St. Louis and Main streets. Mrs. Williamson was driving a Ford and was endeavoring to turn the corner at St. Louis and Main when the auto wheel became caught in the car track, forcing it to that side of the street. Ashauer's machine was coming south on Main street and the two collided. No one was injured and the cars only slightly damaged. The McKinley tracks curve at this corner and it is often difficult to get the automobile wheels out.
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Old Man
Libertyville, his 88 years, retired farmer, and showed the "cut up" did not add man, who er in his youth with whom he darling becker over the ice, and other lane suffered only from the age.

Mathew

A
has many the curb may use as it give for dumb

BUR

Old Man Libertyville, his 88 years, retired farmer, and showed the "cut up" did not add man, who er in his youth with whom he darling becker over the ice, and other lane suffered only from the age.

BUILDS NEW HOUSEWORK PROTECTING

WOODLAWN GARDENS, ADDS, AND
OTHER FOR ROSES.

Tracks Being Laid and Other Features Going On.

Several ranks of men are working in the various departments of construction of the Kootenai River Training Company south of Edgewater and the weather of the past two or three weeks has been ideal to make considerable progress.

The trailing of the grounds has been going on steadily, some of the higher floors being covered by the cables, which will be pulled and covered with a carpet surface for the network of tracks.

The water from the Nefek plant is pumped to the grounds has been furrowed and large quantities of these are being brought into the yards, where they are being piled up to pass through the necessary air drying process before being dipped for the final treatment. We believe that the

through the necessary and arduous process before being dipped in the final treatment. By bundling in the way present early adoption of the dipping will be possible.

the company's 1997 annual report, the product is "a new, more powerful and more reliable computer" that tracks with the "new paradigm" of the Internet as "the new paradigm of computing."

that work he will become more useful after the trucks are laid out to the other eleven gravel miles of the road to be laid.

Proctor, after looking a former "red" up, for the contract for the building of several public works and

WHERE IT STARTED

(Number No. No. 1-1000)

the vessel became more and more prolonged, causing become more widespread and more pointed in its contour until tumors were being fitted about, some of which were so extreme as to be ridiculous and some of which undoubtedly indicated extensive damage upon innocent parties.

Upon the return of Mrs. Hadley from the east it was noticed that she did not go back to the house on St. Louis street but took up her residence at her old home on North Main street with her mother.

Every effort was made yesterday and today to shroud the circumstances in mystery. The law firm of Whangson, Sutton & George allowed the papers on behalf of Mrs. Hadley, but today all members of the firm declined to discuss the matter. The moment the papers were produced in circuit court they were taken out of the records by Attorney M. L. Burroughs of the law firm of Wainwright, Williamson & Burroughs, representing the defendant in the action. Attorney Burroughs when asked this morning for the papers which he had taken from the public records at the court house stated that he had been instructed not to let anyone see them.

It was called to his attention that he had constituted a public record and that there is a rule at the court house to require the lawyers taking papers away from the office of the circuit clerk, Mr. Barrower, said that he had an order permitting him to do this and that his instructions were to keep the papers from the public.

It was then suggested that the circuit judge be the only person who can give such instructions but Mr. Burroughs declined to say whence they emanated. Circuit Judge Gilman is out of the city today and

would not be reached for a statement, stating that while this mystery is prevalent among such an attitude can only be taken when the interest in the case is something no one has been able to figure out, particularly as the declaration's terms are much less interesting and considerably less check-worthy than some of the gossip which surrounded the fling of the case. The declaration merely alleges grounds of envy, and does not even into any specific inclusions nor does it include any other parties.

The law is specific and not collective in diverse proceedings, and requires that parties concerned must be notified in order to appear in court. There will be a perforation bearing of this case, but it is understood that assignments have been reached.

Here in D. C. Stephenson, organizer of the Klan, at Indianapolis, leaving the car; they are confined without bail on a Hoberholtzer. Left to right they are D. C. Stephenson, E.

MINNIE ARE AT RACES
THOUSANDS JOURNEY TO KEN-
TUCKY DAILY.

Quadrin Is a Staunch Favorite For
Hovers.

By DAVIS J. WALSH,
I. N. S. Sports Editor
Louisville, Ky., May 14.—As Mecca is the objective of the devout Mohammedan annual journey, so the famed Louisville today became the focal point of the great American pilgrimage to the shrine of the thoroughbred. Its disciples, prostrated in prayer rugs that bore a singular resemblance to a five dollar mutual ticket on a possible winner of the \$50,000 Kentucky Derby.

Louisville today was in the midst of its annual frenzy with 75,000 visitors gorging the highways and the music of approaching hoof beats rattling in the civic org.

There is only one Kentucky Derby and it will be held late this afternoon at Churchill Downs. The average No. 1 hamsman probably rides into Mecca in an ox cart. His American cousin however came by rail, motor and airplane and after settling down on the city like an army of occupation, received the unwelcome information that the official weather forecast was for showers.

The sky was cloudy early in the day and if it makes good its threat, the entire aspect of the first running of the Turf's three year old classic will be changed.

Quatrain of the Frederick Johnson string, opened a staunch favor. He on the supposition that the track would be as dry as a month's of alkali dust.

But if they liked him on a dry track, their regard was to be more in the mud. They would back him to the right of the horizon. A few of the barnet critics had reached the overtight conclusion that Quatrain was not due, thir choice ranging through Kentucky Cardinal, either Parkhouse or Chantler, Almadel, Captain Hal, Son of John and Flying Ebony. But these gentlemen, in the event of rain were prepared to rear on their form shoes and eat the pieces.

It would be something of a paralytic trick for Quatrain to lose under

94-111

and former head of the county jail with his lieutenant in charge of murdering William Anderson, deputy clerk and Earl Gentry.

HAD UNUSU-
PRISONER USED AS
TAPRONE IN

Special Deputy Sheriff
New York

A human disaster conceived by City Manager for six days a week of the First Baptist church, to clear up the material store of stable sitting in the area. They are being held in jail.

One in the sixties, Bureau of Mitchell, duty sheriff and he having received stolen three and twenty-three taken from his place while members of the according to identify (Ray Feather of the the first man arrested charged with being a also held at the latter was placed in latter and the latter to have all the coming The man held for he was given a paper told to write what a

Those who visit
reported as talking
property and a th
bills. It gave the
The search warrant

Reference Number 9

THE UNIVERSITY OF CHICAGO

White Copy -
Ill. Dept. of Public Health
Yellow Copy - Well Contractor
Blue Copy - Well Owner

INSTRUCTIONS TO DRILLERS

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE
DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST
JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER
SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
WELL CONSTRUCTION REPORT

GEOLOGICAL AND WATER SURVEYS WELL RECORD

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FROM MEMORY

Reference
Number 10

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ILLINOIS DEPARTMENT OF PUBLIC HEALTH
WELL CONSTRUCTION REPORT

GEOLOGICAL AND WATER SURVEYS WELL RECORD

[REDACTED]

White & Pink Copies:
Ill. St. of Public Health
Yellow Copy: Well Contractor
Green Copy: Well Owner

Well Construction Report

THIS FORM MUST BE COMPLETED WITHIN 30 DAYS
OF WELL COMPLETION AND SENT TO
THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
525 WEST JEFFERSON STREET
SPRINGFIELD, ILLINOIS 62761

IMPORTANT NOTICE

This State Agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act 85-0863. Disclosure of this information is mandatory. This form has been approved by the Forms Management Center.

PRESS FIRMLY WITH BLACK PEN OR TYPE

Do Not Use Felt Pen

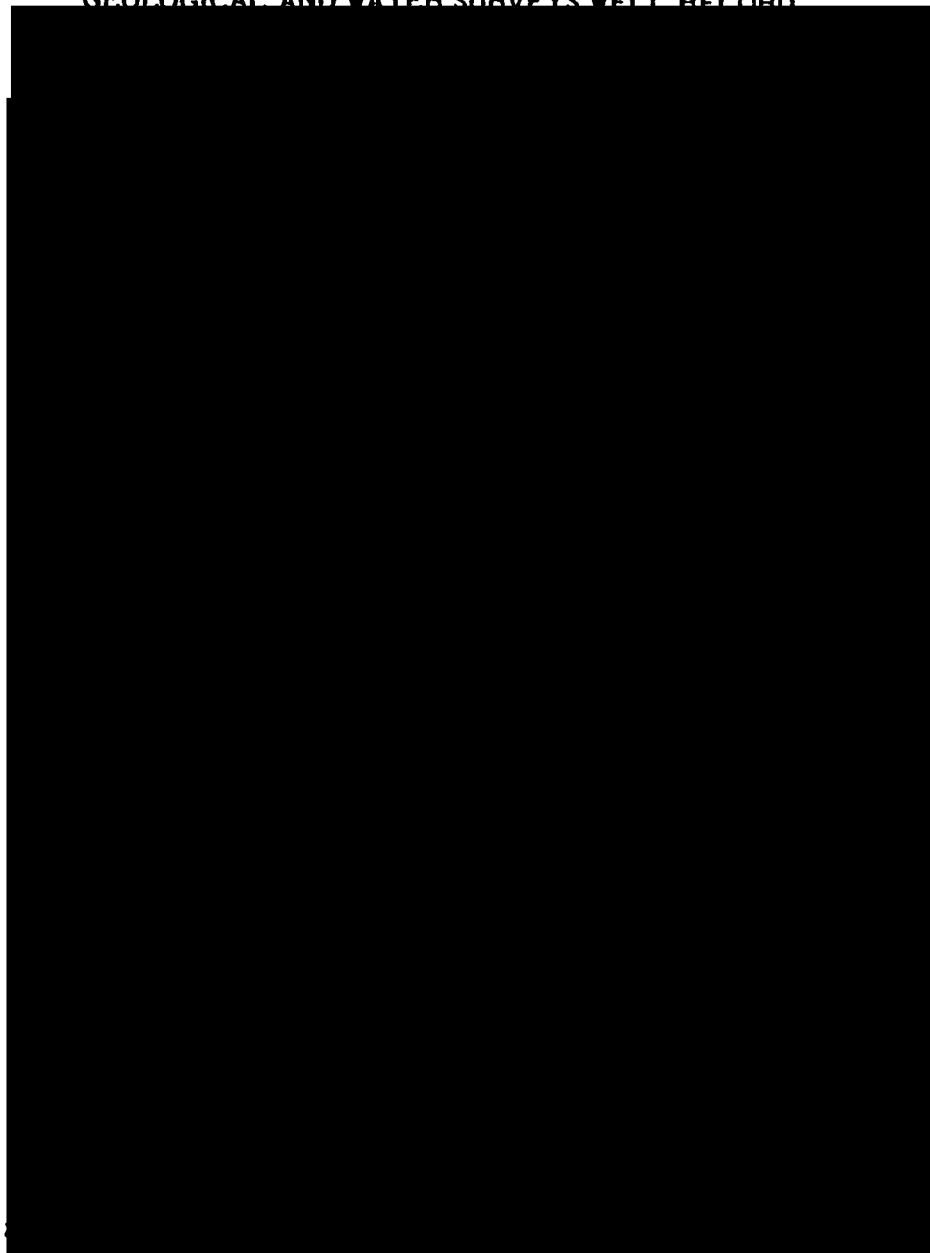
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WELL CONSTRUCTION REPORT

GEOLOGICAL AND WATER SURVEYS WELL RECORD

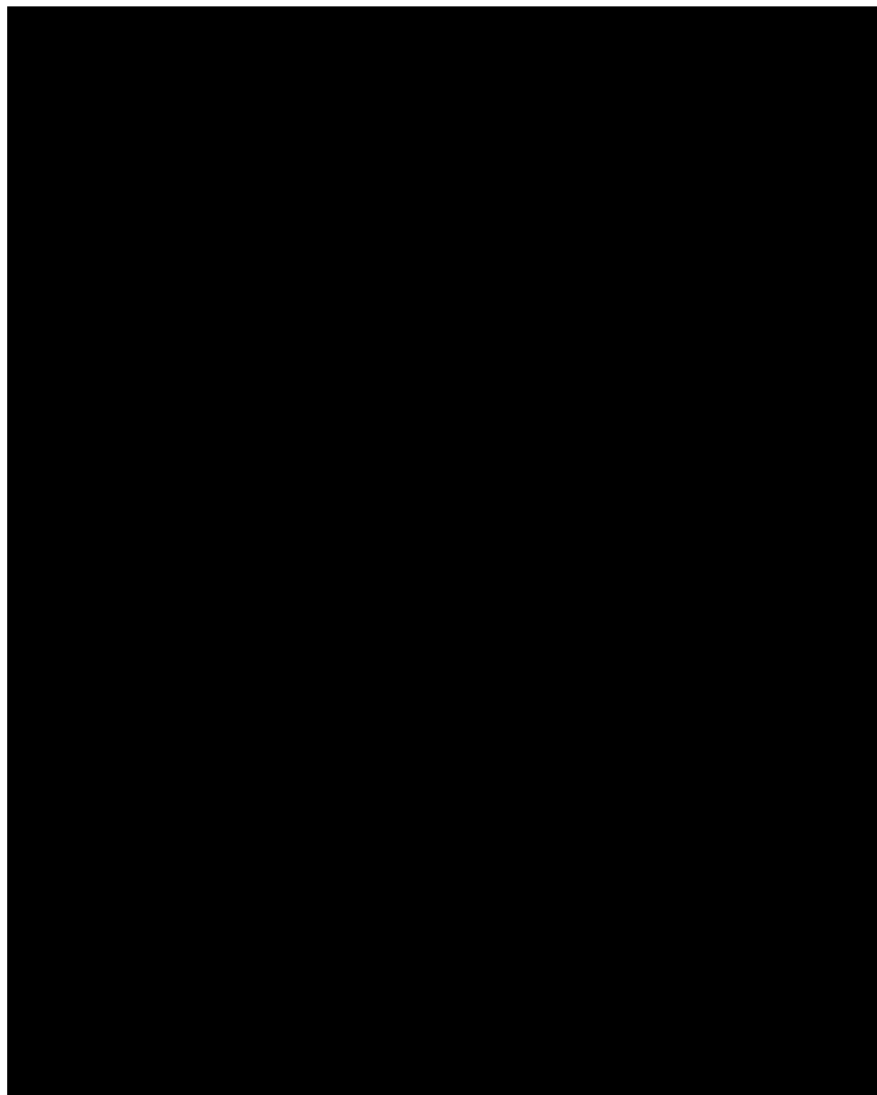


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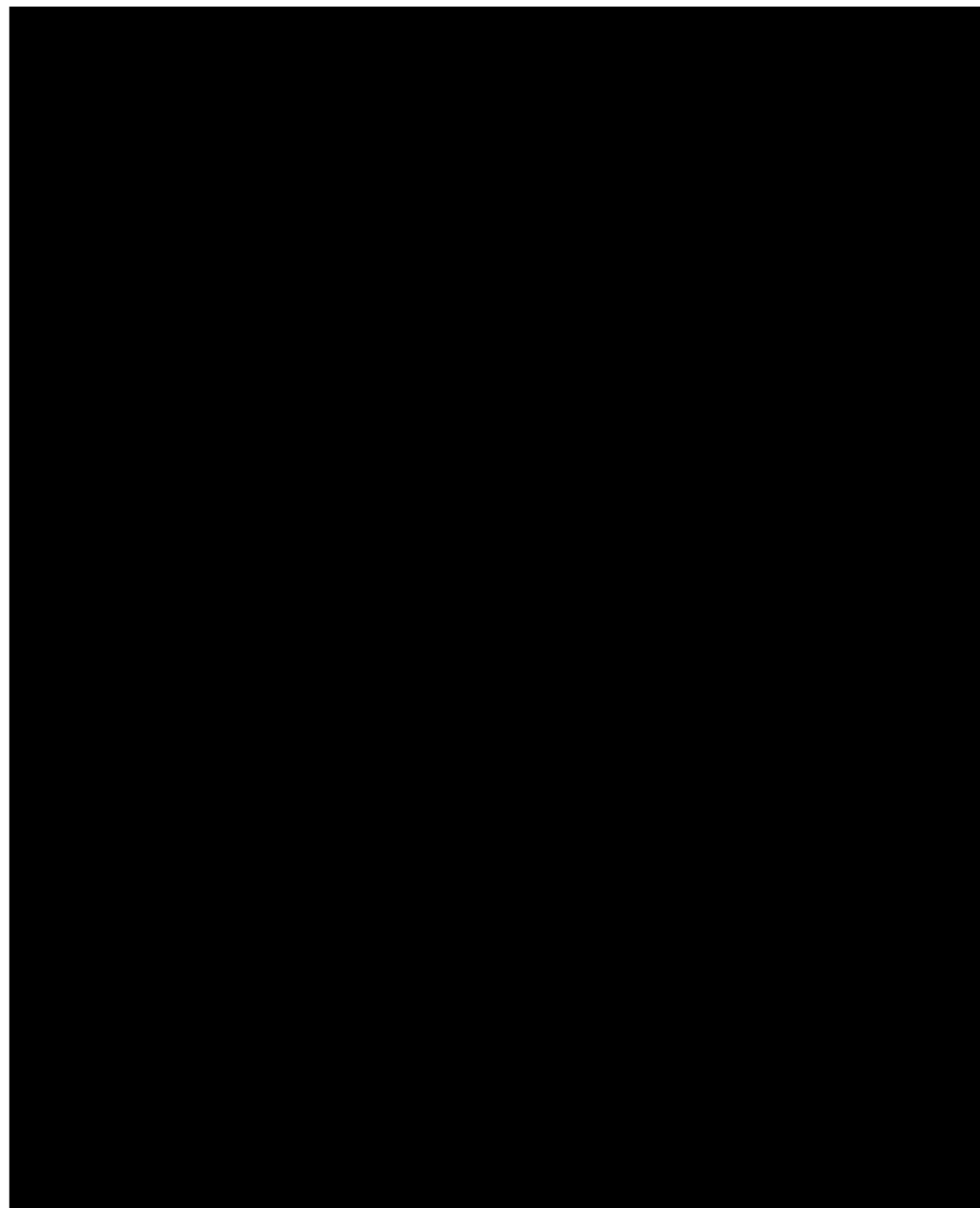
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ILLINOIS DEPARTMENT OF PUBLIC HEALTH
WELL CONSTRUCTION REPORT



GEOLOGICAL AND WATER SURVEYS WELL RECORD



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ILLINOIS DEPARTMENT OF PUBLIC HEALTH
WELL CONSTRUCTION REPORT

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REMARKS:

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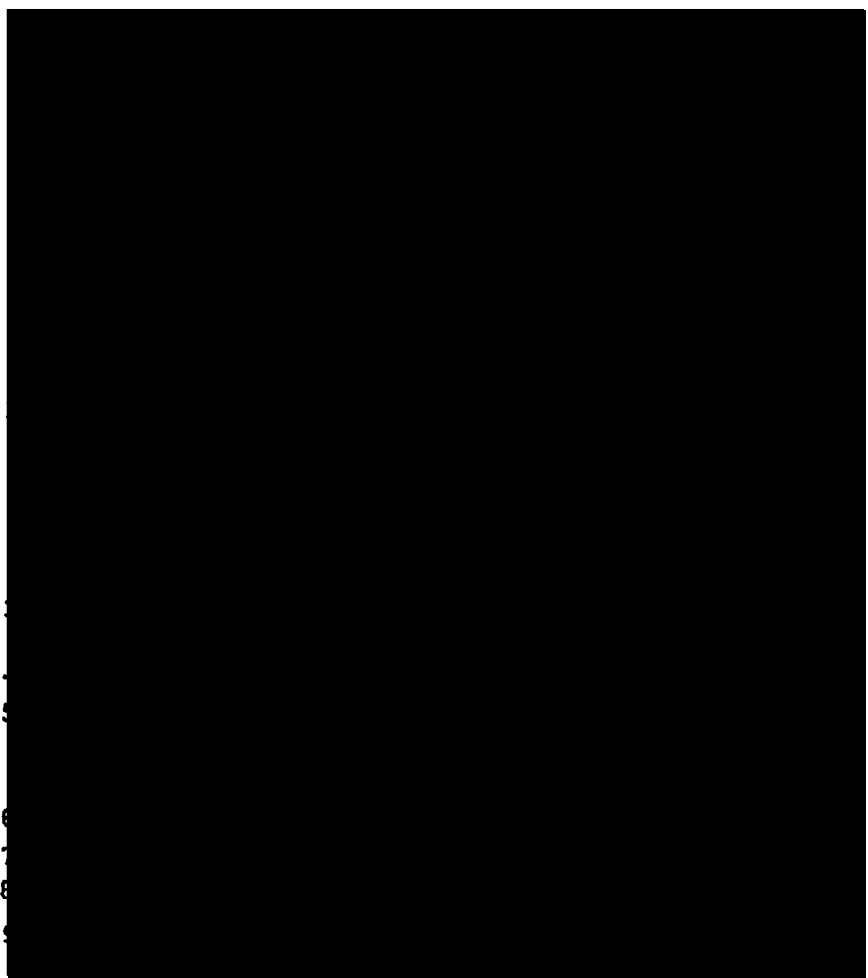
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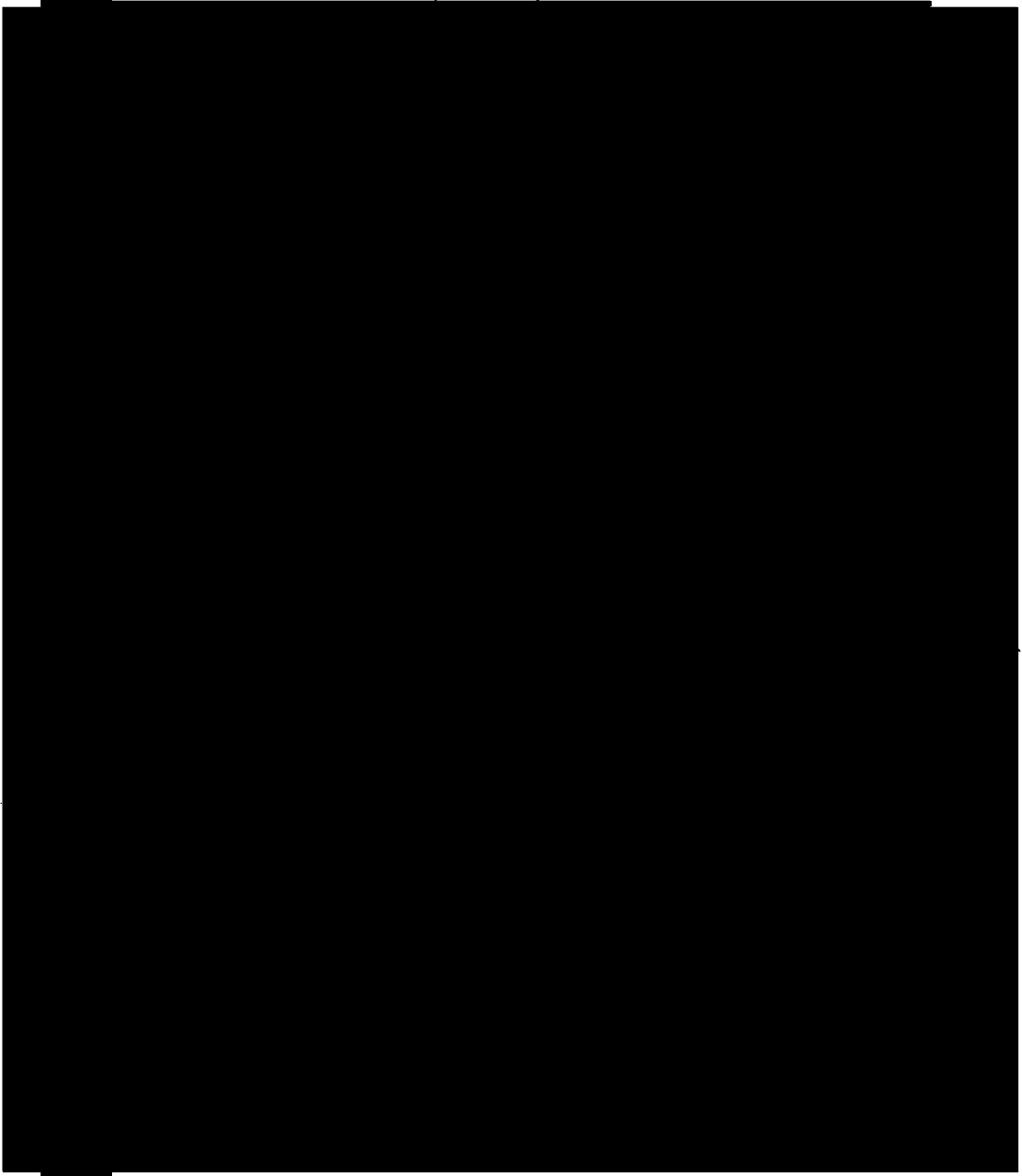
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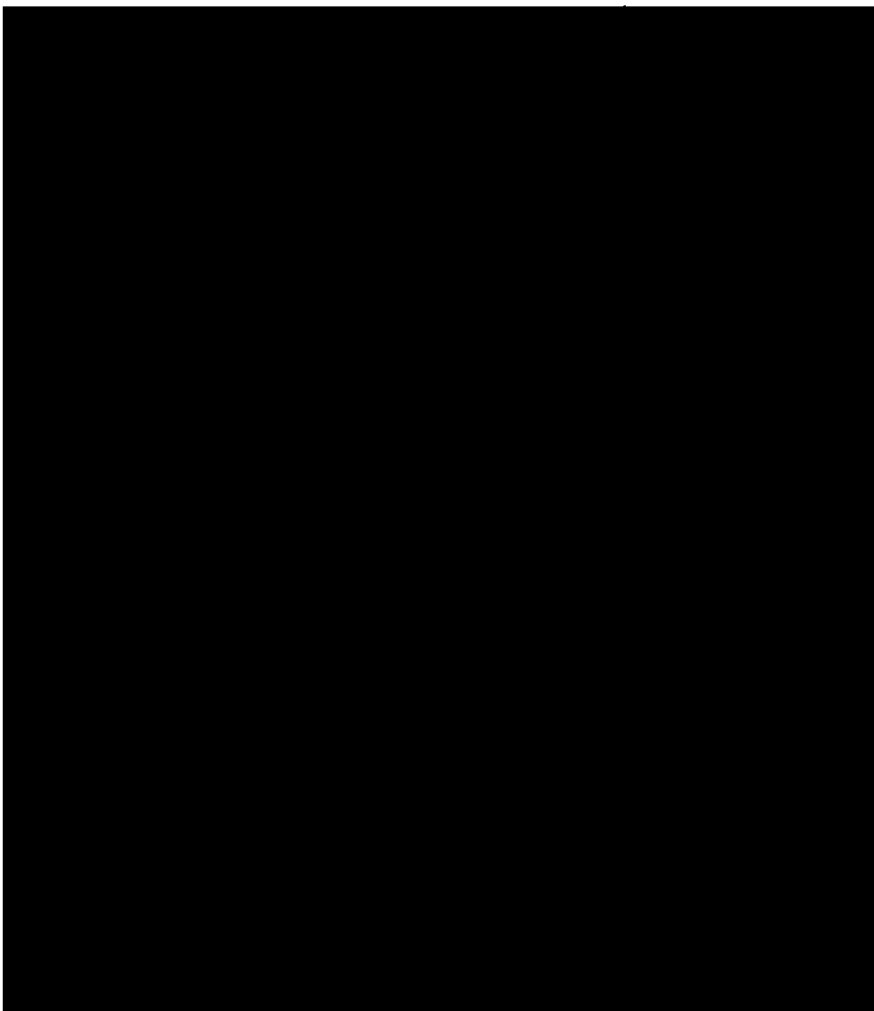
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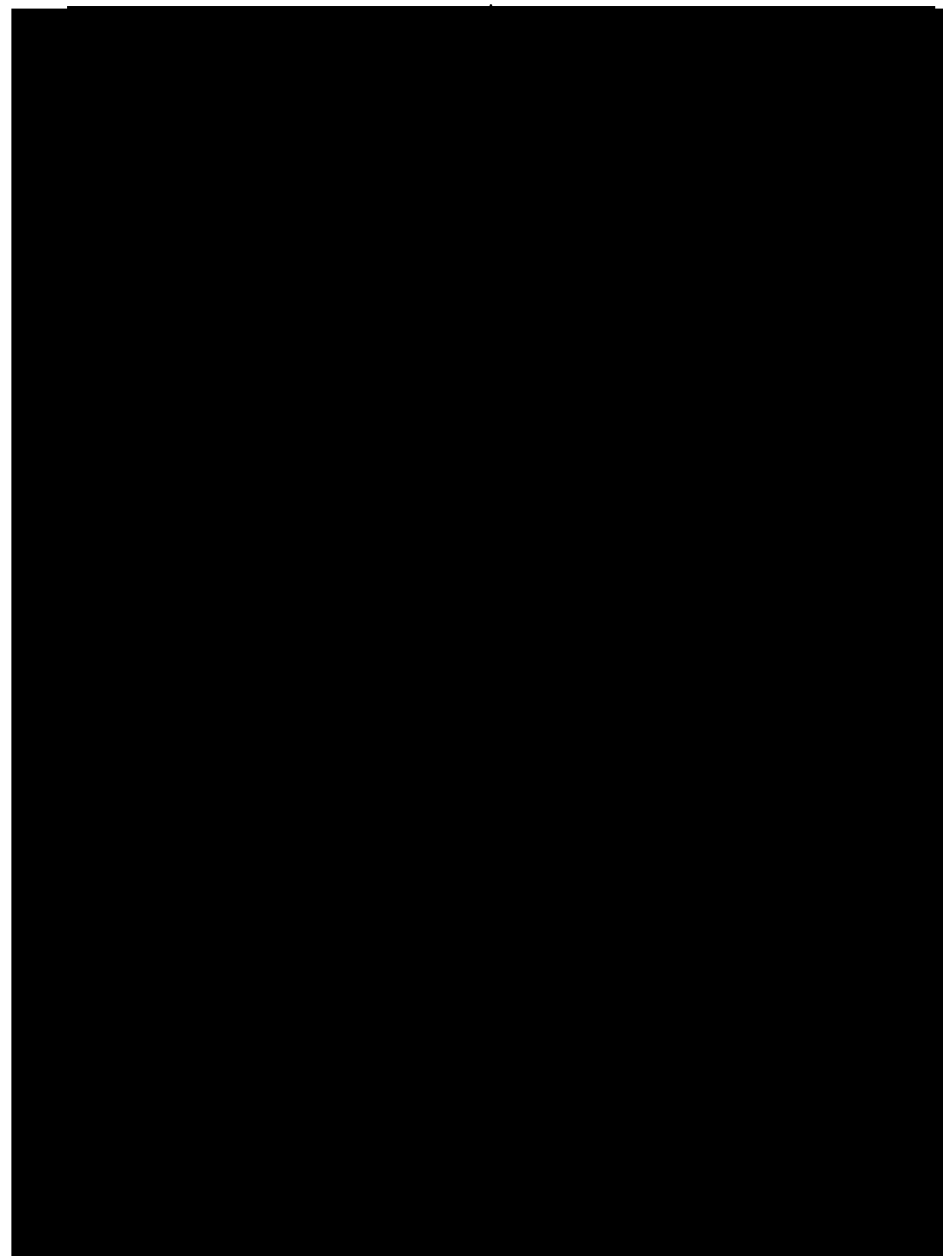
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Well Construction Report

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DIVISION OF ENVIRONMENTAL HEALTH
525 WEST JEFFERSON STREET
SPRINGFIELD, ILLINOIS 62761

GEOLOGICAL AND WATER SURVEYS WELL RECORD

IMPORTANT NOTICE

This State Agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act 85-0863. Disclosure of this information is mandatory. This form has been approved by the Forms Management Center.

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